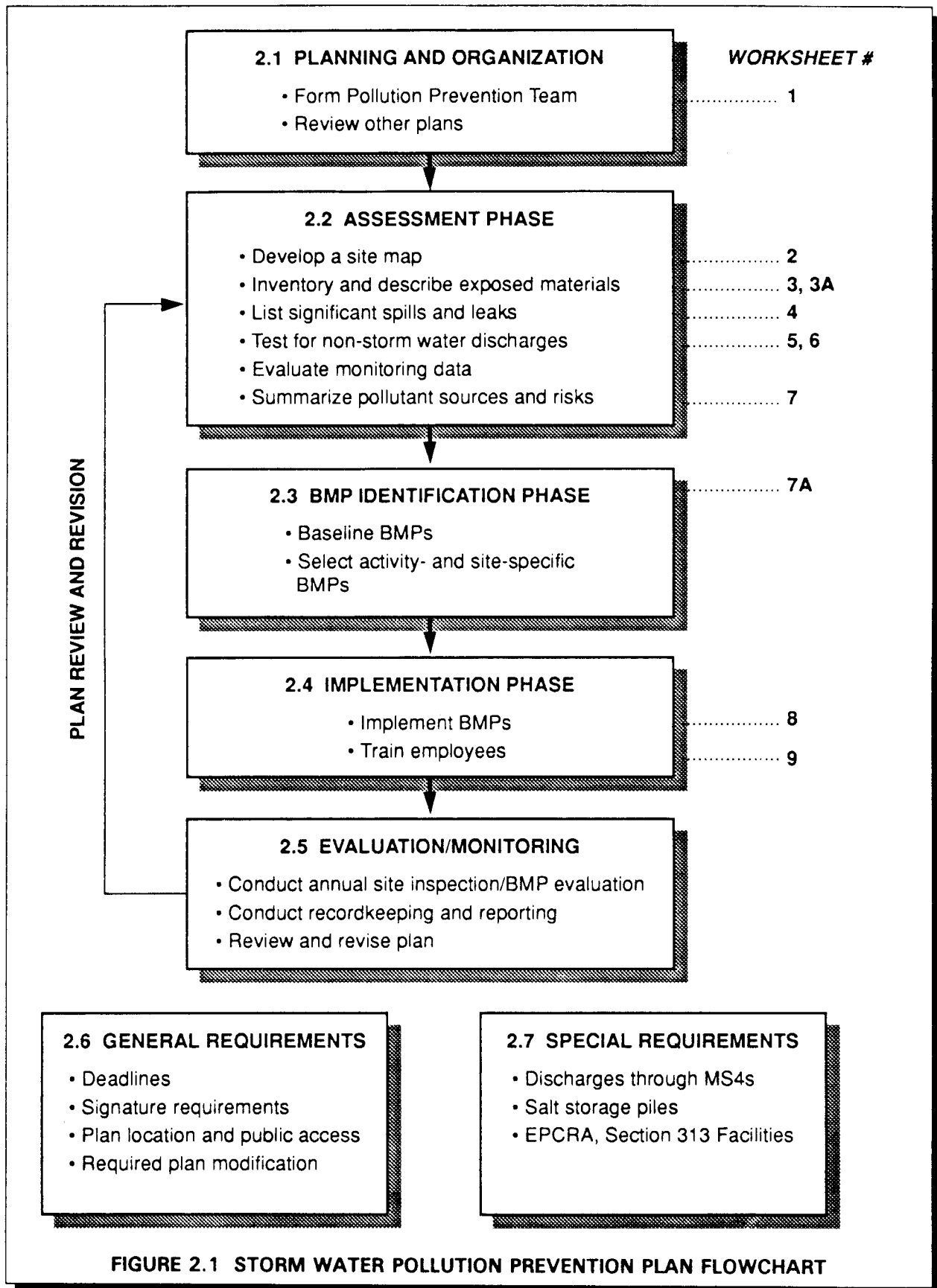

CHAPTER 2

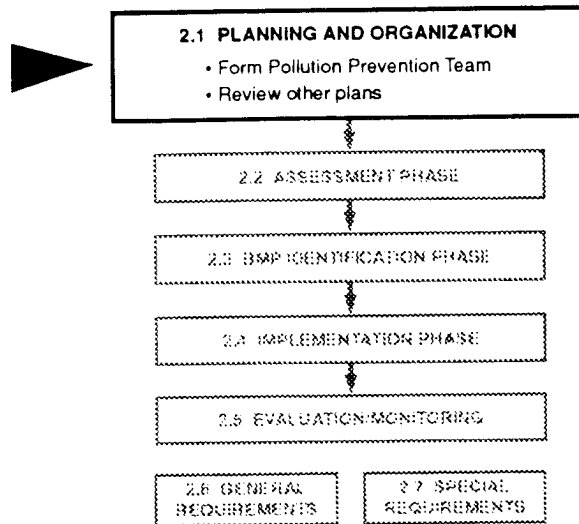
STORM WATER POLLUTION PREVENTION PLAN

Chapter 2 presents a step-by-step guide to help you develop a Storm Water Pollution Prevention Plan for your facility. Figure 2.1 is a flowchart showing each step involved in developing and implementing a successful plan. As shown in this flowchart, the steps have been grouped into five general phases, which are: (1) **planning and organization**; (2) **assessment**; (3) **BMP identification**; (4) **implementation**; and (5) **evaluation/monitoring**. In addition, Storm Water Pollution Prevention Plans also must address a number of **general requirements**, including developing a schedule or deadlines for the accomplishment of tasks, and an identification of signature authority, where required by Federal regulations. Some types of facilities will also have to meet other **special requirements**. For example, special requirements apply to facilities that discharge through municipal separate storm water systems as well as those facilities that are subject to reporting requirements under EPCRA, Section 313 for water priority chemicals.

Figure 2.1 also identifies a number of **worksheets** that can help walk you through the planning process. These worksheets are located at the end of Chapter 2. You can pull them out, photocopy them, and simply incorporate the completed forms in your plan.

The five planning phases, general requirements, and special requirements are discussed in turn in the remainder of this chapter. To help you follow along, a simplified version of the flowchart for the entire planning process is shown at the beginning of each section, with a highlighted box showing the particular phase that is being discussed. So, for example, you will find that the Planning and Organization Phase is highlighted on the flowchart at the top of page 2-3, signaling the beginning of our detailed discussion of this first step.





2.1 PLANNING AND ORGANIZATION PHASE

Before you start putting your Storm Water Pollution Prevention Plan together, there are two tasks to complete to make developing the plan easier. These steps are designed to help you organize your staff and make preliminary decisions:

- Decide who will be responsible for developing and implementing your Storm Water Pollution Prevention Plan
- Look at other existing environmental facility plans for consistency and overlap.

2.1.1 Who Will Develop and Implement Your Plan?

EPA GENERAL PERMIT REQUIREMENTS	
Pollution Prevention Team	
Part IV.D.1.	
Each plan shall identify a specific individual or individuals within the facility organization as members of a storm water pollution prevention team that are responsible for developing the Storm Water Pollution Prevention Plan and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each team member. The activities and responsibilities of the team shall address all aspects of the facility's Storm Water Pollution Prevention Plan.	

What is the Purpose of Designating an Individual or a Team?

Designating a specific individual or team who will develop and implement your pollution prevention plan serves several purposes. Naming the individual or team members makes it clear that part of that person's job is to prevent storm water pollution. Identifying a specific individual also provides a point of contact for those outside the facility who may need to discuss aspects of the facility's pollution prevention plan (i.e., regulatory officials, etc.).

Where setting up a pollution prevention team is appropriate, it is important to identify the key people onsite who are most familiar with the facility and its operations, and to provide adequate structure and direction to the facility's entire storm water management program. The pollution prevention team concept is flexible and should be molded to conform to the resources and specific conditions of the facility. Specific activities of the pollution prevention team, the number of members, and their background and experience will vary for each facility.

Effective organization of the pollution prevention team is important in order for the team to be able to accomplish the task of developing and implementing a comprehensive Storm Water Pollution Prevention Plan. There are two important features in organizing a team of this nature: (1) selecting the right individuals to serve on the team; and (2) establishing good channels of communication.

What are the Roles and Responsibilities of the Designated Individual or Team?

The designated individual or team will be the driving force behind the development, implementation, maintenance, and revision of the facility's Storm Water Pollution Prevention Plan. One of the first tasks of those responsible is to define and agree upon a clear and reasonable set of goals for the facility's overall storm water management program. Where a team is involved, the responsibilities or duties of specific team members should be clearly defined.

Areas of responsibilities include initial site assessment, identification of pollutant sources and risks, decision making on appropriate BMPs, directing the actual implementation of the BMPs, and then, regular evaluations to measure the effectiveness of the plan. Details of these procedures are described in the latter part of this chapter.

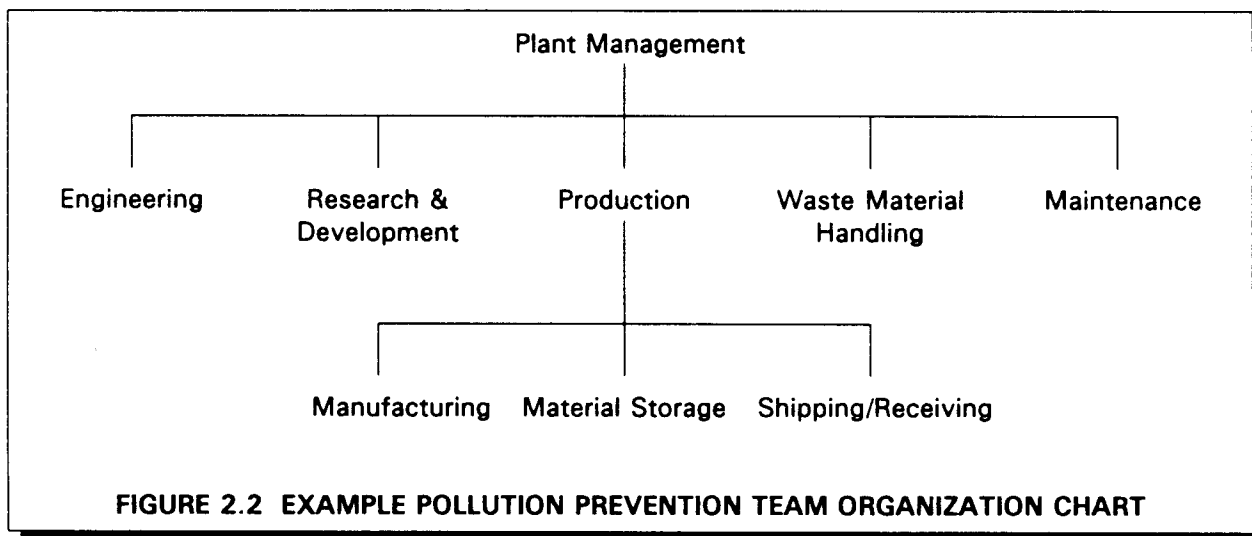
To ensure that the Storm Water Pollution Prevention Plan remains effective, the person or team responsible for maintaining the pollution prevention plan must be aware of any changes that are made in plant operations to determine if any changes must be made.

While a designated individual or a pollution prevention team can be assigned the job of developing and implementing a Storm Water Pollution Prevention Plan, plant management is ultimately responsible for the implementation of the plan and for compliance with all applicable storm water requirements. Accordingly, the designated individual or team must have a clear line of communication with plant management to ensure that they are able to function in a cooperative partnership.

Who Should be on a Storm Water Pollution Prevention Team?

Any team, by definition, involves decision making and planning in a group setting. This allows for people with different ideas and areas of expertise to share knowledge and collectively figure out what works best for a particular facility. To broaden the base of involvement in the facility's storm water pollution prevention program, team members should represent all phases of the facility's operations.

For example, at a large facility, a team may be comprised of representatives from plant management, all aspects of production operations, engineering, waste handling and treatment (environmental department), and, if applicable, research and development. See Figure 2.2 for an illustration of an example team organizational chart.



Not all facilities will have or require all of these "team" positions. As mentioned above, team membership depends on the type of operations occurring at a facility. For example, a small trucking operation may find it appropriate to designate a single individual or a very small pollution prevention team with experience in key types of facility operations, such as vehicle maintenance, vehicle washing, fueling, and materials handling.

For a facility that has already designated a spill prevention and response team, the facility may use some of these personnel on the storm water pollution prevention team, thus overlapping the two groups to a certain extent. However, the roles and responsibilities of the pollution prevention team reach beyond the activities of a spill prevention and response team, and consequently, it would not be appropriate for a facility simply to substitute the spill response team for the pollution prevention team without clearly examining the roles and requirements related to storm water management (see Section 2.1.2).

Worksheet #1 (located at the end of Chapter 2) is an example of an appropriate form on which to list the team members. To complete this worksheet, list the pollution prevention team members by name, facility position (title), phone number, and include a brief description of each member's specific responsibilities. This list can be directly incorporated into the Storm Water Pollution Prevention Plan, but it should also be displayed or posted within the facility so that other plant employees are aware of who is responsible for storm water management.

EPCRA, Section 313 Facility Team Requirements

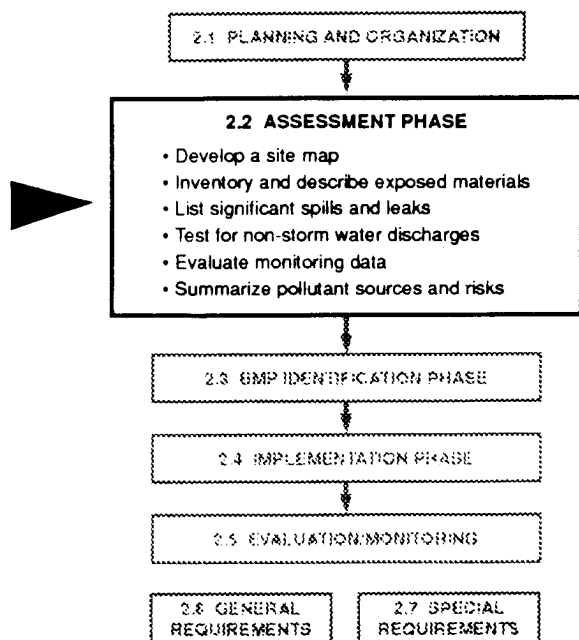
EPA's General Permit contains more specific pollution prevention team requirements for facilities subject to reporting under EPCRA, Section 313 for water priority chemicals [Part IV.D.7.b.(9)]. The team must designate a person who will be accountable for spill prevention at the facility and identify this person in the plan. The designated person is responsible for setting up necessary spill emergency procedures and reporting requirements to isolate, contain, and clean up spills and emergency releases of Section 313 water priority chemicals before a discharge can occur.

2.1.2 Building on Existing Environmental Management Plans

EPA GENERAL PERMIT REQUIREMENTS
<p>Consistency with Other Plans</p> <p>Part IV.D.6.</p> <p>Storm Water Pollution Prevention Plans may reflect requirements for Spill Prevention Control and Countermeasure (SPCC) plans developed for the facility under Section 311 of the Clean Water Act or BMP programs otherwise required by an NPDES permit for the facility as long as such requirement is incorporated into the Storm Water Pollution Prevention Plan.</p>

Many industrial facilities may have already incorporated storm water management practices into day-to-day operations as a part of an environmental management plan required by other regulations. Potentially relevant elements of a number of different types of plans are listed in Appendix G at the end of this manual. The plans addressed include: the Preparedness, Prevention and Contingency Plan (40 Code of Federal Regulations (CFR) 264 and 265), the Spill Control and Countermeasures requirements (40 CFR 112), the National Pollutant Discharge Elimination System Toxic Organic Management Plan (40 CFR 413, 433, 469), and the Occupational Safety and Health Administration (OSHA) Emergency Action Plan (29 CFR 1910). It is the responsibility of the pollution prevention team to evaluate these other plans to determine which, if any, provisions may be incorporated into the Storm Water Pollution Prevention Plan.

In some cases, it may be possible to build on elements of these plans that are relevant to storm water pollution prevention. For example, if your facility already has in place an effective spill prevention and response plan, elements of that spill prevention strategy may be relevant to your approach for storm water pollution prevention. More specifically, lists of potential pollutants or constituents of concern may provide a starting point for your list of potential storm water pollutants. Although you should build on relevant portions of other environmental plans as appropriate, it is important to note that your Storm Water Pollution Prevention Plan must be a comprehensive, stand-alone document.



2.2 ASSESSMENT PHASE - DESCRIPTION OF POTENTIAL POLLUTANT SOURCES

After identifying who is responsible for developing and implementing your plan and organizing your planning process, you should proceed to this next step—a pollutant source assessment. This is where you take a look at your facility and site and determine what materials or practices are or may be a source of contaminants to the storm water running off your site. To complete this phase, you will:

- Assess the potential sources of storm water pollution at your facility
- Create a map of the facility site to locate pollutant sources and determine storm water management opportunities
- Conduct a material inventory
- Evaluate past spills and leaks
- Identify non-storm water discharges and illicit connections
- Collect or evaluate storm water quality data
- Summarize the findings of this assessment.

EPA GENERAL PERMIT REQUIREMENTS	
Description of Potential Pollutant Sources	
Part IV.D.2.	
Each plan should provide a description of potential sources which may be reasonably expected to add significant amounts of pollutants to storm water discharges or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. Each plan shall identify all activities and significant materials which may potentially be significant pollutant sources.	

This phase is designed to help you to target the most important pollutant sources for corrective and/or preventive action, thus using a "risk-based" approach to environmental protection. Details on how to complete this assessment are provided in the next six subsections of this chapter (see 2.2.1-2.2.6). These sections of the manual will help you discover areas at your facility that have the potential for contributing pollutants to storm water. Within each of the following sections, you will find helpful worksheets and suggestions for accomplishing a complete and accurate assessment of existing and potential problems. Each of the required components builds on the others; therefore, it is very important to perform each step thoroughly.

2.2.1 Developing a Site Map

EPA GENERAL PERMIT REQUIREMENTS
Site Drainage and Potential Pollutant Sources Part IV.D.2.a.(1). The facility site map must include: <ul style="list-style-type: none">• An outline of the drainage area of each storm water outfall• Location of any existing structural control measures used to reduce pollutants in storm water runoff• Surface water bodies• Locations where significant materials are exposed to precipitation• Locations where major spills or leaks have occurred• Locations for each of the following activities (where exposed to storm water):<ul style="list-style-type: none">- Fueling stations- Vehicle and equipment maintenance and/or cleaning areas- Loading/unloading areas- Treatment, storage, or waste disposal areas- Liquid storage tanks- Processing areas- Storage areas.

The facility site map is basically an illustration of the overall site and location, and should indicate property boundaries, buildings and operation or process areas, as well as provide information on drainage, storm water control structures, and receiving streams. Locating these features on the map will help you assess where potential storm water pollutants are located on your site, where they mix with storm water, and where storm water leaves your site. All of this information is essential in identifying the best opportunities for storm water pollution prevention or control. **Worksheet #2** (located at the end of Chapter 2) is designed to help you develop an appropriate and useful site map.

Figures 2.3 and 2.4 are good examples of site maps with different layers of information to help locate sources of pollution on your site. When properly drafted, your site map will be a very useful tool to assist in designing the proper pollution prevention controls, thereby preventing further degradation of water quality by reducing additional water pollution.

Outfalls and Drainage Areas

Once boundaries and facility structures have been shown on your site map, you should identify all of the storm water outfalls (also called "discharge points") on your site. A storm water outfall is the point where storm water enters a natural waterway or a separate storm sewer system. If your facility has its own storm water conveyance system, locate where the pipes or conveyances discharge to a stream, river, lake, or other water body. If your facility discharges to a municipal separate storm sewer system, your onsite drainage point into the system is an outfall. However, on many sites, storm water is simply collected in ditches. The discharge points may not be so obvious, particularly when it is not raining. In these cases, it may be necessary to inspect your site

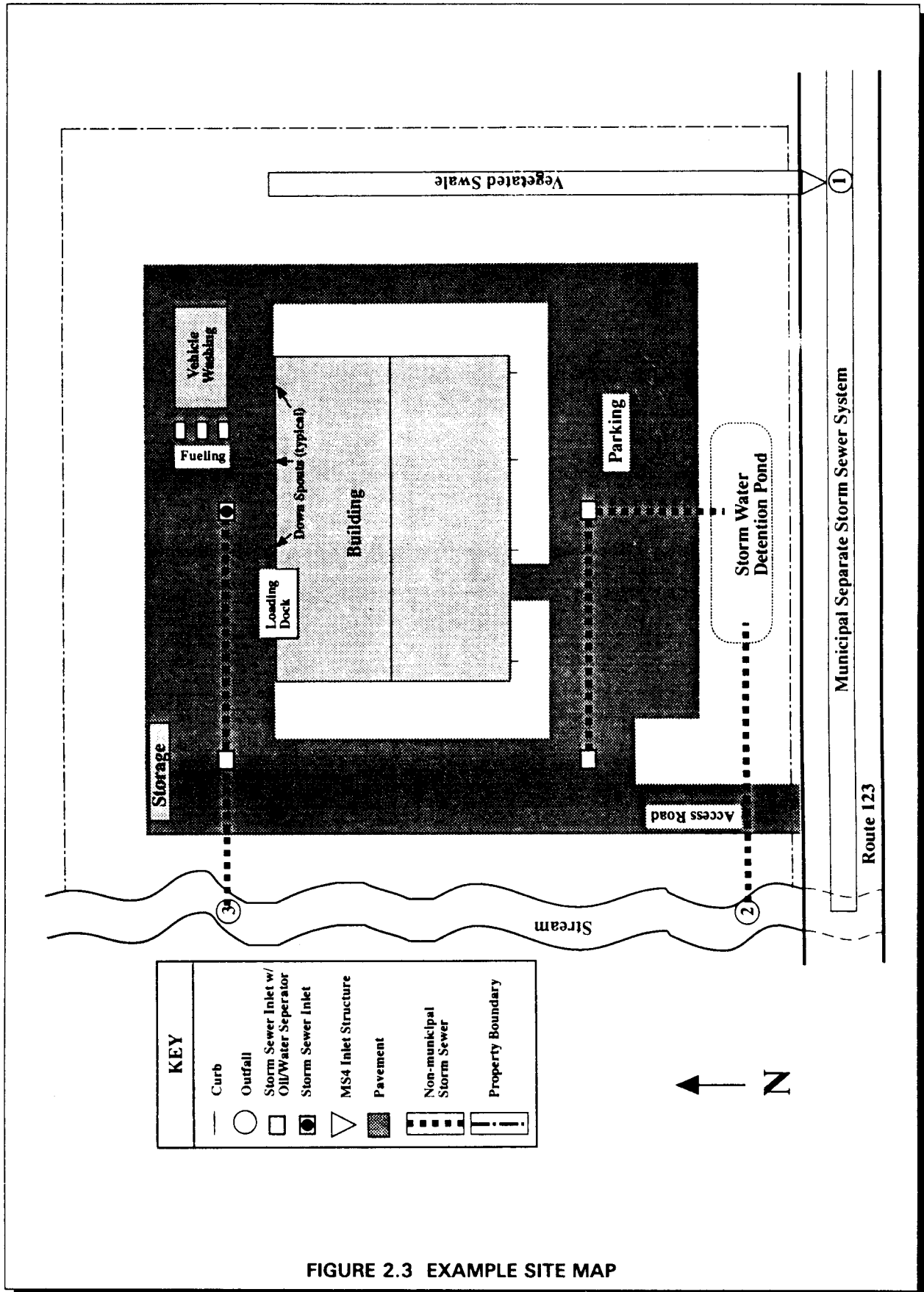
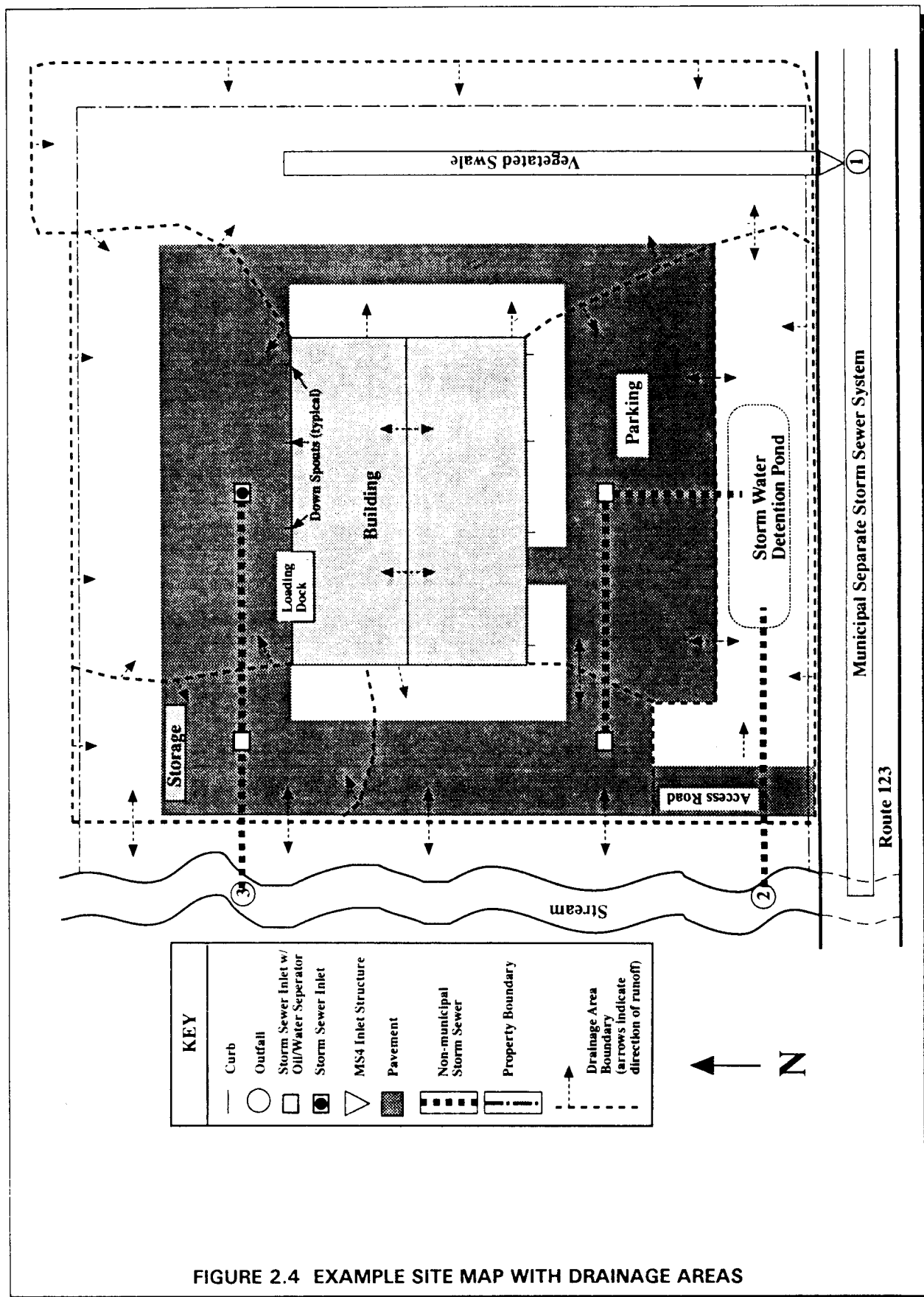


FIGURE 2.3 EXAMPLE SITE MAP



particularly when it is not raining. In these cases, it may be necessary to inspect your site during a rain storm to identify your discharge points. Clearly label each outfall either with letters (A, B, C, etc.) or numbers (1, 2, 3, etc.) so that you can easily reference these discharge points in other sections of your Storm Water Pollution Prevention Plan.

Working back from the storm water outfalls you have identified, now determine the drainage areas for each outfall (see Figure 2.4). A topographic map can help with this task if one with the suitable scale is readily available. For larger facilities (greater than 25 acres), 7.5 minute topographic maps, available from the United States Geological Survey (USGS), probably have the level of detail necessary to determine site drainage patterns.

Maps may be purchased from local commercial dealers or directly from USGS information offices. Check your local yellow pages for commercial dealers. Topographic maps may also be purchased by mail. Standard topographic quadrangles cost \$2.50. You can order maps from the following locations:

USGS Map Sales		for Alaska maps:
Box 25286	or	USGS Map Sales
Denver, CO 80225		101 12th Ave., #12
		Fairbanks, AK 99701

For smaller sites, examination of a topographic map may not reveal very much about the drainage patterns of the site. A simple alternative is to examine the contours of your site. A visual observation of flows or the use of small floatables or dyes in concentrated flows are simple methods to determine drainage patterns on your facility. Drainage patterns may be very obvious in some cases, such as drainage down a particular hill on the site. In areas where the site appears to be relatively flat, a rough study of storm water flow during a rain event should provide you with a sufficient sense of the flow patterns.

Structural Storm Water Controls

Other features to include on the site map are the locations and identification of any existing structural control measures already in place that are used to control or direct storm water runoff. A structural control measure is any physically constructed feature you have onsite that is used specifically to change the way that storm water flows or that is used to remove pollutants from storm water. Examples of structural controls include: retention/detention ponds, flow diversion structures (including ditches and culverts), vegetative swales, porous pavement, sediment traps, and any soil stabilization or erosion control practices. See Chapter 4 for a more complete description and illustrations of these structures. Each structure should be clearly identified on the site map, as illustrated in Figure 2.3.

Surface Waters

On the site map, you should label all surface water bodies on or next to the site. This includes any stream, river, lake, or other water body (see Figure 2.3 as an example). Each water body should be identified by name. If you do not know the name of the water body, you can check the USGS topographical maps discussed above for the legal name. Your municipal government may also have municipal maps that identify small streams by name. If your storm water runoff flows into a small, unnamed tributary, the name of the downstream water body will be sufficient.

Potential Pollutant Sources

To develop a useful site map for your facility's Storm Water Pollution Prevention Plan, you must also indicate other items on the map so that you understand what activities are taking place in each drainage area, and therefore, what types of pollutants may be present in storm water from these areas. These features include:

- Topography of site (discussed above)
- Location of exposed significant materials (see Section 2.2.2)
- Locations of past spills and leaks (see Section 2.2.3)
- High-risk waste generating areas and activities common on industrial sites, such as:
 - Fueling stations
 - Vehicle and equipment maintenance
 - Vehicle and equipment washing
 - Loading and unloading areas
 - Above-ground liquid storage tanks
 - Industrial waste management areas and outside manufacturing
 - Outside storage of raw materials, by-products, or finished products.

You will notice that specific BMPs may be applied to control the amount of pollutants in storm water discharges from these areas (see Chapter 3). Now is the time to determine if any of these activities take place onsite, and in which drainage areas they take place.

EPA GENERAL PERMIT REQUIREMENTS
<p>Types of Pollutants and Flow Direction</p> <p>Part IV.D.2.a.(2).</p> <p>For each area of the facility that generates storm water discharges associated with industrial activity with a reasonable potential for containing significant amounts of pollutants, include a prediction of the direction of flow and identify the types of pollutants which are likely to be present in storm water discharges associated with industrial activity. Factors to consider include the toxicity of the chemical; quantity of chemicals used, produced, or discharged; the likelihood of contact with storm water; and the history of significant leaks or spills of toxic or hazardous pollutants. Flows with a significant potential for causing erosion shall be identified.</p>

2.2.2 Material Inventory

EPA GENERAL PERMIT REQUIREMENTS
<p align="center">Inventory of Exposed Materials</p> <p align="center">Part IV.D.2.b.</p> <p>Conduct an inventory of materials that may be exposed to storm water at your site, and include a narrative description of:</p> <ul style="list-style-type: none"> • Significant materials that have been handled, treated, stored, or disposed in a manner to allow exposure to storm water between the time of three years prior to the date of permit issuance and the present • Method(s) and location of onsite storage or disposal • Materials management practices employed to minimize contact of these materials with storm water runoff between the time of three years prior to the date of the issuance of the permit and the present • Existing structural and nonstructural control measures to reduce pollutants in storm water runoff, including their locations • Any treatment of storm water runoff.

The next step in the Assessment Phase is to conduct a material inventory at your site, specifically looking for materials that have been exposed to storm water and measures you have taken to prevent the contact of these materials with storm water. Maintaining an up-to-date material inventory is an efficient way to identify what materials are handled onsite and which may contribute to storm water contamination problems. As discussed above, these potential pollutant sources should be identified on your facility's site map.

Worksheet #3 (located at the end of Chapter 2) will help guide you through the process of conducting a material inventory for your Storm Water Pollution Prevention Plan. Although an inventory of all materials (exposed and not exposed) is required as part of EPA's General Permits, conducting such an inventory is a good first step in compiling a list of exposed materials. If any of the significant materials on your site have been exposed to storm water in the three years prior to the effective date of your permit, fill out **Worksheet #3A** and include it in your plan.

Inventory of Exposed Significant Materials

"Significant materials," as defined in 40 CFR 122.26(b)(12), are substances related to industrial activities such as process chemicals, raw materials, fuels, pesticides, and fertilizers (see Glossary in Appendix B for exact definition). When these substances are exposed to storm water runoff, they may be carried to a receiving stream with the storm water flow. Therefore, identification of these materials helps to determine where a potential for contamination exists and is the first step in identifying appropriate BMPs to address this contamination potential.

To inventory the materials on your site, inspect your site carefully. You may wish to use the site checklist (page 2-14) to help you identify exposed materials. Focus on areas where you store, process, transport or transfer any materials used or produced during your industrial processes. Check any storage tanks, pipes or pumping areas and note any leaks or spills. Observe any loading

or unloading operations and indicate whether any industrial materials are exposed to storm water during those processes. Look at any unsealed dumpsters or disposal units/areas where you deposit wastes from your industrial activities and document instances where waste materials are exposed to rain. Also pay attention to material handling equipment, including everything from vehicles to pallets, where raw and waste materials from your industrial activities are exposed. Finally, consider areas such as the roof where particles are emitted from air vents and are likely to fall within your drainage areas.

Site Checklist
<input type="checkbox"/> Does your facility show signs of poor housekeeping (cluttered walkways, unswept floors, uncovered materials, etc.)?
<input type="checkbox"/> Are there spots, pools, puddles, or other traces of oil, grease, or other chemicals on the ground?
<input type="checkbox"/> Is there discoloration, residue, or corrosion on the roof or around vents or pipes that ventilate or drain work areas?
<input type="checkbox"/> Do you see leaking equipment, pipes, containers, or lines?
<input type="checkbox"/> Are there areas where absorbent materials (kitty litter, saw dust, etc.) are regularly used?
<input type="checkbox"/> Do you notice signs such as smoke, dirt, or fumes that indicate material losses?
<input type="checkbox"/> Do you smell strange odors, or experience eye, nose, or throat irritation when you first enter the work area? These are indications of equipment leaks.
<input type="checkbox"/> Do storage containers show signs of corrosion or leaks?
<input type="checkbox"/> Are there open containers, stacked drums, shelving too small to properly handle inventory, or other indications of poor storage procedures?
<input type="checkbox"/> Are containers properly labeled?

These are some basic guidelines meant to help you determine what kinds of things to look out for. This list does not necessarily cover every possible source of pollutants. As the site operator, you are responsible for knowing the particular concerns associated with your activity. Be as detailed as you can in your description of the significant materials exposed at your facility. Discuss what you found in your assessment, the amounts present and their location. Update this inventory whenever new, significant materials are introduced and exposed onsite so that your management practices can be modified to suit any changes.

Next, you should give closer scrutiny to areas where you store or dispose of industrial materials. Inspect your various containers carefully and note whether there are any openings, holes or leaks that allow storm water to contact significant materials in those containers.

Existing Management Measures and Treatment of Storm Water Runoff

Now that you have described the potential pollutant sources in storm water runoff from your site, you should describe what management practices you currently use. Management practices can be as simple as scheduled sweeping of the material transfer area. In this section of your plan you must describe both structural and nonstructural management practices. Structural management

practices are those practices that entail construction of manmade structures such as berms, detention ponds, or grassed swales, whereas nonstructural management practices involve regularly scheduled actions (such as sweeping, inspections, or improved materials handling and management practices).

Remember that the purpose of BMPs is to keep the pollutants out of storm water runoff by reducing material exposure to storm water, directing the storm water away from contaminated areas, or reducing the volume of potentially polluting materials on the site.

Finally, you must describe any treatment that you provide for the storm water discharges from your site. The treatment of storm water is often accomplished through holding in a detention pond which allows for settling of inorganic solids and partial removal of organic contaminants. In the case of detention ponds, you should describe the size and average depth of each pond on your site (storage volume). You should also provide any design criteria (i.e., design flow rates, etc.) for the pond that may be available to you from engineering design reports or diagrams. Your site may also direct some of your storm water into your process water treatment system. If so, you should identify what type of treatment is provided, and whether this is allowed under your NPDES or other discharge permit. In any case, be sure to specify areas from which the treated storm water drains.

2.2.3 Identifying Past Spills and Leaks

EPA GENERAL PERMIT REQUIREMENTS
<p style="text-align: center;">Spills and Leaks Part IV.D.2.c.</p> <p>Include a list of significant spills and significant leaks of toxic or hazardous pollutants that occurred at areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility after the date of three years prior to the effective date of this permit. Such list shall be updated as appropriate during the term of this permit.</p>

The next component of the assessment phase of your pollution prevention plan is a list of significant spills and significant leaks of toxic or hazardous materials that have occurred at your facility. This list provides information on potential sources of storm water contamination. The first question that comes to mind is "What is a significant spill or leak?"

EPA has defined "significant spills" to include releases within a 24-hour period of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act and Section 102 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Reportable quantities are set amounts of substances in pounds, gallons, or other units and are listed in 40 CFR Part 117 and 40 CFR Part 302. This list is included as Appendix H in this manual. If your facility releases these listed hazardous substances to the environment in excess of these amounts, you are required to notify the National Response Center at (800) 424-8802 as soon as possible. Releases are defined to include any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.

Worksheet #4 (located at the end of Chapter 2) can help you organize this list of leaks and spills. The areas on your site where significant leaks or spills have occurred are areas on which you should focus very closely when selecting activity-specific or site-specific BMPs.

If several of these events have occurred at your facility, pay special attention to Section 2.3.1, which discusses spill prevention and response procedures. Adequate spill prevention and response

procedures are one of the BMPs that should be included in your pollution prevention plan. Using the proper procedures will reduce the likelihood of spills or releases in the future, thus reducing the opportunity for spilled pollutants to come into contact with storm water.

The above list of significant leaks and spills, together with the other information gathered to identify pollutants and sources, provides the necessary focus for the BMP Identification Phase of your facility's Storm Water Pollution Prevention Plan. This information is used to target pollution prevention activities such as preventive maintenance, good housekeeping, spill prevention and response procedures, employee training, and storm water management controls such as covering, flow diversion, erosion control and treatment that ultimately will reduce pollutant loadings in storm water discharges.

2.2.4 Identifying Non-Storm Water Discharges

EPA GENERAL PERMIT REQUIREMENTS
<p style="text-align: center;">Non-Storm Water Discharges</p> <p style="text-align: center;">Part IV.D.3.g.(1).</p> <p>The plan must include a certification that all storm water outfalls have been tested or evaluated for the presence of non-storm water discharges. The certification shall include:</p> <ul style="list-style-type: none"> • Identification of potential non-storm water discharges • A description of the results of any test and/or evaluation for the presence of non-storm water discharges • The evaluation criteria or test method used • The date of testing and/or evaluation • The onsite drainage points that were directly observed during the test and/or evaluation. <p>This certification shall be signed in accordance with Section 2.6.2 in this manual and must be included in your Storm Water Pollution Prevention Plan. An example certification form is provided as Worksheet #5.</p> <p>If this certification is not feasible because you do not have access to an outfall, manhole, or other point of access to the final storm water discharge point(s), you should describe why the certification was infeasible. You also must notify the permitting authority by October 1, 1993 (or 180 days after submitting the Notice of Intent (NOI) for facilities that begin industrial activities after October 1, 1992), of any potential sources of non-storm water discharges to the storm water discharge and why you could not perform the test for non-storm water discharges. This certification must be signed in accordance with Section 2.6.2 of this manual and submitted to the permitting authority. An example Failure to Certify form is provided as Worksheet #6.</p>

Examples of non-storm water discharges include any water used directly in the manufacturing process (process water), air conditioner condensate, non-contact cooling water, vehicle wash water, or sanitary wastes. Connections of non-storm water discharges to a storm water collection system are common yet are often unidentified. Those types of discharges are significant sources of water quality problems. Unless permitted by an NPDES permit, such discharges are illegal. If such connections are discovered, disconnect them or submit an NPDES permit application (Form 2C

for process wastewater or 2E for nonprocess wastewater) to your permitting authority. Such interconnections must be disconnected or covered by an NPDES permit.

To check for non-storm water discharges, you may elect to use one of four common dry weather tests described below and in more detail in Appendix F: (1) visual inspection; (2) plant schematic review; and (3) dye testing.

Visual Inspection

The easiest method for detecting non-storm water connections into the storm water collection system is simply to observe all discharge points during dry weather. Inspect each discharge point on three separate occasions. As a rule, the discharge point should be dry during a period of extended dry weather since a storm water collection system should only collect storm water. Keep in mind, however, that drainage of a particular rain event can continue for three days or more after the rain has stopped. In addition, infiltration of ground water into the underground collection system is also common. To be sure about the source of any flow during dry weather, you may need to perform one of the additional tests described below.

Sewer Map

A review of a plant schematic is another simple way to determine if there are any interconnections into the onsite storm water collection system. A sewer map or plant schematic is a map of pipes and drainage systems used to carry process wastewater, non-contact cooling water, air conditioner condensate, and sanitary wastes (bathrooms, sinks, etc.). A common problem, however, is that sites often do not have accurate, up-to-date schematics. If you do have an accurate and reliable plant schematic, you can simply examine the pathways of the different water circuits listed above. Be sure also to investigate where the floor drains discharge. These are commonly connected to the storm sewer system, especially in older buildings.

Dye Testing

Another method for detecting improper connections to the storm water collection system is dye testing. A dye test can be performed by simply releasing a dye into either your sanitary or process wastewater system and examining the discharge points from the storm water collection system for discoloration. A detailed description of the equipment needed and proper procedures for a dye test is included in Appendix F.

Non-Storm Water Discharges

As noted above, unless covered by an NPDES permit, non-storm water discharges are illegal. Generally, non-storm water discharges are issued individual NPDES permits based on application Form 2C (for process wastewater) or Form 2E (for nonprocess wastewater). However, EPA's General Permit authorizes the following types of non-storm water discharges:

- Discharges from fire fighting activities
- Fire hydrant flushings
- Potable water sources including waterline flushings
- Irrigation drainage

- Lawn watering
- Uncontaminated ground water
- Foundation or footing drains where flows are not contaminated with process materials
- Discharges from springs
- Routine exterior building washdown which does not use detergents or other compounds
- Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred and where detergents are not used
- Air conditioning condensate.

Be sure to examine your facility's storm water permit to determine whether it authorizes any of these or other non-storm water discharges. If your permit does not authorize non-storm water discharges occurring at your facility, you should contact your permitting authority or the Storm Water Hotline for more information about how to address these discharges.

EPA GENERAL PERMIT REQUIREMENTS	
Non-Storm Water Discharges	
Part IV.D.3.g.(2).	
Except for flows from fire fighting activities, sources of non-storm water that are authorized by this permit must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component of the discharge.	

Generally, except for flows from fire fighting activities, all non-storm water connections that are identified and that are authorized by your storm water discharge permit should be identified in the Storm Water Pollution Prevention Plan. Where necessary to minimize pollutants in these discharges, pollution prevention measures should be adopted and implemented. The pollution potential from these sources can be significantly reduced where a conscious effort is taken to control them.

2.2.5 Storm Water Monitoring Data

EPA GENERAL PERMIT REQUIREMENTS
<p style="text-align: center;">Sampling Data Part IV.D.2.d.</p> <p>Include a summary of any existing discharge sampling data describing pollutants in storm water discharges from the facility and a summary of sampling data collected during the term of this permit.</p>

Storm water sampling data provide information that describes the quality of storm water discharges. These data are valuable because they indicate the potential environmental risk of the discharge by identifying the types and amounts of pollutants present. In addition, these data can be used to identify potential sources of storm water pollution.

During the site assessment phase, permittees should collect and summarize any storm water sampling data that were collected in the past. Historical storm water monitoring data may be very useful in locating areas which have previously contributed pollutants to storm water discharges and identifying what the problem pollutants are. In your summary of these data, describe the sample collection procedures used. Be sure to cross-reference the particular storm water outfall sampled to one of the outfalls designated on your site map.

Although some permittees may not have to conduct storm water sampling under the permit that is issued to that facility, incorporation of these data into the Storm Water Pollution Prevention Plan as it is collected will provide a basis for evaluating the effectiveness of the plan. Under EPA's General Permit, certain classes of facilities are required to conduct storm water sampling either annually or semiannually throughout the term of the permit. Appendix J contains a table summarizing these sampling requirements, including the parameters for which analysis is required and the sampling frequency. State-issued storm water general permits may include similar provisions. Generally, where sampling is required, facilities must collect and analyze grab and composite samples in accordance with the protocol established in 40 CFR Part 136. EPA has published a guidance manual addressing storm water sampling requirements and procedures for NPDES storm water discharge permit applications. Although directed toward application requirements, the guidance manual contains information that would be of assistance to facilities required to sample under a storm water general permit. To obtain a copy of the manual, call the Storm Water Hotline at (703) 821-4823.

2.2.6 Assessment Summary

EPA GENERAL PERMIT REQUIREMENTS
<p>Risk Identification and Summary of Potential Pollutant Sources</p> <p>Part IV.D.2.e.</p> <p>Include in your plan a narrative description of the potential pollutant sources and identify any pollutant of concern that may be generated by the following activities at your facility:</p> <ul style="list-style-type: none">• Loading and unloading operations• Outdoor storage activities• Outdoor manufacturing or processing activities• Significant dust or particulate generating activities• Onsite waste disposal practices.

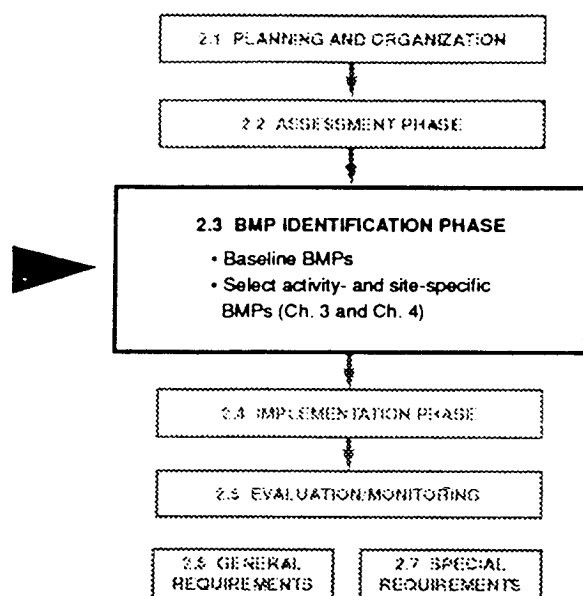
Once you have completed the above steps in your pollutant source assessment, you should have enough information to determine which areas, activities or materials may contribute pollutants to storm water runoff from your site. With this information, you can select the most appropriate BMPs to prevent or control pollutants from these areas.

The following paragraph is an example of how you can analyze the information you have gathered and start to figure out what you can do to correct these problems:

In a particular drainage area, you have a vehicle maintenance facility area where oil filters are stored outdoors. You found that no material management practices were currently being used to protect the used filters from contact with storm water. You would then suspect that the storm water draining from that area would most likely contain a significant amount of oil and grease. Therefore, you have concluded that you need to do something to reduce the possibility of oil and grease mixing with storm water.

EPA's General Permit requires this type of narrative description summarizing any potential source of storm water pollutants, and what types of pollutants have already been or may be found in storm water runoff from the site.

Worksheet #7 (located at the end of Chapter 2) will help you organize the pollutant sources that you identified during the site assessment phase, relate them to management practices that you already have in place, and list potential new BMP options to address remaining pollutant sources.



2.3 BMP IDENTIFICATION PHASE

Once you have identified and assessed potential and existing sources of contamination to storm water at your facility, the next step is to select the proper measures or BMPs that will eliminate or reduce pollutant loadings in storm water discharges from your facility site. Specifically, your plan design will include the following BMPs:

- Good housekeeping
- Preventive maintenance
- Visual inspections
- Spill prevention and response
- Sediment and erosion control
- Management of runoff
- Employee training
- Recordkeeping and reporting
- Other BMPs as appropriate

BMPs are measures used to prevent or mitigate pollution from any type of activity. BMPs are a very broad class of measures and may include processes, procedures, schedules of activities, prohibitions on practices, and other management practices to prevent or reduce water pollution. In essence, they are anything a plant manager, department foreman, environmental specialist, consultant or employee may identify as a method, short of actual treatment, to curb water pollution. They may be inexpensive or costly. BMPs can be just about anything that "does the job" of preventing toxic or hazardous substances from entering the environment.

The purpose of this section is to describe the "baseline" BMPs that you must include in your facility's storm water pollution prevention program and offer some guidelines about how to select more "advanced" BMPs that are tailored to the specific pollutant sources on your particular site. With this information, you should be able to design a storm water management program that best addresses any problems with runoff from your facility's site.

2.3.1 Baseline Best Management Practices

EPA GENERAL PERMIT REQUIREMENTS
<p>Measures and Controls</p> <p>Part IV.D.3.</p> <p>Each facility covered by this permit shall develop a description of storm water management controls appropriate for the facility and implement such controls. The appropriateness and priorities of controls in a plan shall reflect identified potential sources of pollutants at the facility. The description of storm water management controls shall address the following minimum components, including a schedule for implementing such controls:</p> <ul style="list-style-type: none">• Good Housekeeping• Preventive Maintenance• Visual Inspections• Spill Prevention and Response• Sediment and Erosion Control• Management of Runoff• Employee Training (see Section 2.4.2)• Recordkeeping and Reporting (see Section 2.5.2)

"Baseline" BMPs are practices that are inexpensive, relatively simple, and applicable to a wide variety of industries and activities. Most industrial facilities already have these measures in place for product loss prevention, accident and fire prevention, worker health and safety, or to comply with other environmental regulations. The purpose of this section is to highlight how these common practices can be improved and tailored to prevent storm water pollution. EPA's Storm Water Program is emphasizing these generic measures because they can be effective, are cost-effective, and because they emphasize prevention over treatment.

Industrial facilities must implement, at a minimum, the above-listed eight baseline BMPs, where appropriate. How each of these BMPs can prevent storm water pollution is described in detail below.

Worksheet #7a (located at the end of Chapter 2) is designed to help you list the specific activities or practices that you select to include in your plan for each of the baseline BMPs.

Good Housekeeping

EPA GENERAL PERMIT REQUIREMENTS
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Good Housekeeping Part IV.D.3.a. Good housekeeping requires the maintenance of areas which may contribute pollutants to storm water discharges in a clean, orderly manner.

Good housekeeping practices are designed to maintain a clean and orderly work environment. Often the most effective first step towards preventing pollution in storm water from industrial sites simply involves using good common sense to improve the facility's basic housekeeping methods. Poor housekeeping can result in more waste being generated than necessary and an increased potential for storm water contamination. A clean and orderly work area reduces the possibility of accidental spills caused by mishandling of chemicals and equipment and should reduce safety hazards to plant personnel. Well maintained material and chemical storage areas will reduce the possibility of storm water mixing with pollutants.

There are some simple procedures a facility can use to promote good housekeeping, including improved operation and maintenance of industrial machinery and processes, material storage practices, material inventory controls, routine and regular clean-up schedules, maintaining well organized work areas, and educational programs for employees about all of these practices. The following sections describe these good housekeeping procedures and provide a checklist that you can use to evaluate and improve your facility's storm water pollution prevention program.

Operation and Maintenance

These practices ensure that processes and equipment are working well. Improved operation and maintenance practices are easy to implement. Here are a few examples of basic operation and maintenance BMPs that should be incorporated in your good housekeeping program:

- Maintain dry and clean floors and ground surfaces by using brooms, shovels, vacuum cleaners, or cleaning machines
- Regularly pickup and dispose of garbage and waste material
- Make sure equipment is working properly (see Section 2.3.4 on preventive maintenance)
- Routinely inspect for leaks or conditions that could lead to discharges of chemicals or contact of storm water with raw materials, intermediate materials, waste materials, or products (see Visual Inspection BMP below)
- Ensure that spill cleanup procedures are understood by employees (see Spill Prevention and Response BMP below).

Material Storage Practices

Improper storage can result in the release of materials and chemicals that can cause storm water runoff pollution. Proper storage techniques include:

- Providing adequate aisle space to facilitate material transfer and easy access for inspections
- Storing containers, drums, and bags away from direct traffic routes to prevent accidental spills (see Spill Prevention and Response BMP below)
- Stacking containers according to manufacturers' instructions to avoid damaging the containers from improper weight distribution
- Storing containers on pallets or similar devices to prevent corrosion of the containers which can result when containers come in contact with moisture on the ground
- Assigning the responsibility of hazardous material inventory to a limited number of people who are trained to handle hazardous materials.

Material Inventory Procedures

Keeping an up-to-date inventory of all materials (hazardous and non-hazardous) present on your site will help to keep material costs down caused by overstocking, track how materials are stored and handled onsite, and identify which materials and activities pose the most risk to the environment. The following instructions explain the basic steps to completing a material inventory. **Worksheets #3 and 3A** provide an example of the types of information you should collect while conducting the inventory.

- **Identify all chemical substances present in the workplace.** Walk through the facility and review the purchase orders for the previous year. List all of the chemical substances used in the workplace, and then obtain the Material Safety Data Sheet (MSDS) for each.
- **Label all containers** to show the name and type of substance, stock number, expiration date, health hazards, suggestions for handling, and first aid information. This information can usually be found on the MSDS. Unlabeled chemicals and chemicals with deteriorated labels are often disposed of unnecessarily or improperly.
- **Clearly mark** on the inventory hazardous materials that require special handling, storage, use, and disposal considerations.

Improved material tracking and inventory practices, such as instituting a shelf-life program, can reduce the waste that results from overstocking and the disposal of out-dated materials. Careful tracking of all materials ordered may also result in more efficient materials use.

Decisions on the amount of hazardous materials the facility stores should include an evaluation of your emergency control systems. Ensure that storage areas are designed to contain spills.

Employee Participation

Frequent and proper training of employees in good housekeeping techniques reduces the possibility that the chemicals or equipment will be mishandled. Motivating employees to reduce waste generation is another important pollution prevention technique. Section 2.4.2 provides more information on employee training programs. Here are some suggestions for involving employees in good housekeeping practices:

- Incorporate information sessions on good housekeeping practices into the facility's employee training program
- Discuss good housekeeping at employee meetings
- Publicize pollution prevention concepts through posters
- Post bulletin boards with updated good housekeeping procedures, tips and reminders.

Good Housekeeping Checklist
<input type="checkbox"/> Is good housekeeping included in the storm water pollution prevention program?
<input type="checkbox"/> Are outside areas kept in a neat and orderly condition?
<input type="checkbox"/> Is there evidence of drips or leaks from equipment or machinery onsite?
<input type="checkbox"/> Is the facility orderly and neat? Is there adequate space in work areas?
<input type="checkbox"/> Is garbage removed regularly?
<input type="checkbox"/> Are walkways and passageways easily accessible, safe, and free of protruding objects, materials or equipment?
<input type="checkbox"/> Is there evidence of dust on the ground from industrial operations or processes?
<input type="checkbox"/> Are cleanup procedures used for spilled solids?
<input type="checkbox"/> Is good housekeeping included in the employee program?
<input type="checkbox"/> Are good housekeeping procedures and reminders posted in appropriate locations around the workplace?
<input type="checkbox"/> Are there regular housekeeping inspections?

Preventive Maintenance

EPA GENERAL PERMIT REQUIREMENTS

Preventive Maintenance

Part IV.D.3.b.

Your preventive maintenance program must include:

- Timely inspection and maintenance of storm water management devices (e.g., cleaning oil/water separators, catch basins)
- Inspection and testing of facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters
- Proper maintenance of facility equipment and systems.

Most plants already have preventive maintenance programs that provide some degree of environmental protection. The program you undertake as part of the Storm Water Pollution Prevention Plan should not just duplicate previous efforts, but should expand the current preventive maintenance programs to include storm water considerations, especially the upkeep and maintenance of storm water management devices. The pollution prevention team should evaluate the existing plant preventive maintenance program and recommend any necessary changes.

Preventive maintenance involves the regular inspection and testing of plant equipment and operational systems (see Visual Inspections description below). These inspections should uncover conditions such as cracks or slow leaks which could cause breakdowns or failures that result in discharges of chemicals to storm sewers and surface waters. The program should prevent breakdowns and failures by adjustment, repair or replacement of equipment. An effective preventive maintenance program should therefore include the following elements:

- Identification of equipment, systems, and facility areas that should be inspected
- Schedule for periodic inspections or tests of these equipment and systems
- Appropriate and timely adjustment, repair or replacement of equipment and systems
- Maintenance of complete records on inspections, equipment, and systems.

Identification of Equipment to Inspect

The first step is to identify which systems or equipment may malfunction and cause spills, leaks, or other situations that could lead to storm water runoff contamination. Look back at what sources of potential storm water contamination were identified during the pollutant source assessment phase. The following list identifies some types of equipment to include in your preventive maintenance inspection and testing program:

Equipment to Inspect
<ul style="list-style-type: none"> • Pipes • Pumps • Storage tanks and bins • Pressure vessels • Pressure release valves • Process and material handling equipment • Storm water management devices (oil/water separators, catch basins, or other structural or treatment BMPs).

Schedule Routine Preventive Maintenance Inspections

Once you have identified which equipment and areas to inspect at your facility, set schedules for routine inspections. Include examination for leaks, corrosion, support or foundation failure, or other forms of deterioration or leaks in your inspection. Look for spots or puddles of chemicals and document any detection of smoke, fumes, or other signs of leaks. Periodic testing of plant equipment for structural soundness is a key element of preventive maintenance. This can be done by making sure storage tanks are solid and strong enough to hold materials. Another important consideration is when and how often preventive maintenance inspections should be conducted to ensure that this practice is effective. Smaller facilities with little equipment and few systems may still find it necessary to conduct frequent inspections if the equipment is older and more susceptible to leaks or other discharges. Preventive maintenance inspections may be conducted as part of your regular visual inspections.

Equipment Repair or Replacement

Promptly repair or replace defective equipment found during inspections and testings. Keeping spare parts for equipment that needs frequent repair is another simple practice that can help avoid problems and equipment down-time.

Records on Preventive Maintenance

Include a suitable records system for scheduling tests and documenting inspections in the preventive maintenance program. Record test results and follow up with corrective action. Make sure records are complete and detailed. These records should be kept with other visual inspection records.

EPCRA, Section 313 Facility Preventive Maintenance Inspection Requirements

EPA's General Permit contains additional preventive maintenance inspection requirements for facilities subject to reporting under EPCRA, Section 313 for water priority chemicals [Part IV.D.7.b.(7)]. For these facilities, all areas of the facility must be inspected for the following at appropriate intervals as specified in the plan:

- Leaks or conditions that would lead to discharges of Section 313 water priority chemicals
- Conditions that could lead to direct contact of storm water with raw materials, intermediate materials, waste materials or products
- Examine piping, pumps, storage tanks and bins, pressure vessels, process and material handling equipment, and material bulk storage areas for leaks, wind blowing, corrosion, support or foundation failure, or other deterioration or noncontainment.

These inspections must occur at intervals based on facility design and operational experience, and the timing must be specified in the plan.

When a leak or other threatening condition is found, corrective action must be taken immediately or the facility unit or process must be shut down until the problem is repaired.

Visual Inspections

EPA GENERAL PERMIT REQUIREMENTS
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Visual Inspections

Part IV.D.3.d.

- | |
|---|
| <ul style="list-style-type: none"> • Identify qualified plant personnel who will inspect plant equipment and areas at appropriate intervals in the plan • Track results of inspections to ensure that appropriate actions are taken • Maintain records of all inspections. |
|---|

Preventing pollution of storm water runoff from your facility requires good housekeeping in areas where materials are handled, stored, or transferred and preventive maintenance of process equipment and systems. Such practices are described in detail above and should be outlined in your Storm Water Pollution Prevention Plan. Regular visual inspections are your means to ensure that all of the elements of the plan are in place and working properly.

Routine visual inspections are not meant to be a comprehensive evaluation of the entire storm water pollution prevention program—that is the function of the Annual Site Inspection and Site Evaluation described in Section 2.5.1 below. Rather, they are meant to be a routine look-over of the facility to identify conditions which may give rise to contamination of storm water runoff with pollutants from your facility.

Every facility is different, so it is up to the facility owner/operator to determine what areas of your facility could potentially contribute pollutants to storm water runoff, and to devise and implement a visual inspection program based on this information. The visual inspection is simply a way to confirm that the measures chosen are in place and working and should periodically take place during storm events. The frequency of visual inspection should be determined by the types and amounts of materials handled at the facility, existing BMPs at the facility, and any other factors that may be relevant, such as the age of the facility (in general, older facilities should be inspected at more frequent intervals than new facilities). The following lists identify some types of equipment and plant areas to include in your Visual Inspections and preventive maintenance plan:

Areas to Inspect

- | |
|--|
| <ul style="list-style-type: none"> • Areas around all of equipment listed in Preventive Maintenance box • Areas where spills and leaks have occurred in the past • Material storage areas (tank farms, drum storage) • Outdoor material processing areas • Material handling areas (e.g., loading, unloading, transfer) • Waste generation, storage, treatment and disposal areas. |
|--|

Implementation of a Visual Inspection Plan

The best plan is a simple one, and this includes the visual inspection plan - there is no reason for it to be highly technical, complicated or labor-intensive. If your facility already has a routine surveillance program in place, consider expanding it to include the visual inspection element of your Storm Water Pollution Prevention Plan. For example, if your facility has a security surveillance program, you might consider training facility security personnel to perform the visual inspection program. If your facility has no routine surveillance or inspection program already in place, then a plan must be developed and people must be assigned the responsibility for carrying the inspections out. It is important to remember that the employees carrying out the visual inspection program should be properly trained, familiar with the storm water pollution prevention program, and knowledgeable about proper recordkeeping and reporting procedures.

Records of Inspections

The most important thing for you to remember here is to document all inspections. Inspection records should note when inspections were done, who conducted the inspection, what areas were inspected, what problems were found, and steps taken to correct any problems, including who has been notified. Many industrial facilities will already have some sort of incident reporting procedure in place — existing incident reporting and security surveillance procedures could easily be incorporated into the Storm Water Pollution Prevention Plan. These records should be kept with the plan. EPA's General Permit requires that records be kept until at least one year after coverage under the permit expires.

Visual Inspection Checklist
Do you see:
<input type="checkbox"/> Corroded drums or drums without plugs or covers
<input type="checkbox"/> Corroded or damaged tanks, tank supports, and tank drain valves
<input type="checkbox"/> Torn bags or bags exposed to rain water
<input type="checkbox"/> Corroded or leaking pipes
<input type="checkbox"/> Leaking or improperly closed valves and valve fittings
<input type="checkbox"/> Leaking pumps and/or hose connections
<input type="checkbox"/> Broken or cracked dikes, walls or other physical barriers designed to prevent storm water from reaching stored materials
<input type="checkbox"/> Windblown dry chemicals
<input type="checkbox"/> Improperly maintained or overloaded dry chemical conveying systems.

Spill Prevention and Response

EPA GENERAL PERMIT REQUIREMENTS

Spill Prevention and Response

Part IV.D.3.c.

- Identify areas where spills can occur onsite and their drainage points
- Specify material handling procedures, storage requirements, and use of equipment such as diversion valves, where appropriate
- Identify procedures used for cleaning up spills and inform personnel about these procedures
- Provide the appropriate spill clean-up equipment to personnel.

Spills and leaks together are one of the largest industrial sources of storm water pollutants, and in most cases are avoidable. Establishing standard operating procedures such as safety and spill prevention procedures along with proper employee training can reduce these accidental releases. Avoiding spills and leaks is preferable to cleaning them up after they occur, not only from an environmental standpoint, but also because spills cause increased operating costs and lower productivity.

Development of spill prevention and response procedures is a very important element of an effective Storm Water Pollution Prevention Plan. A spill prevention and response plan may have already been developed in response to other environmental regulatory requirements. If your facility already has a spill prevention and response plan, it should be evaluated and revised if necessary to address the objectives of the Storm Water Pollution Prevention Plan.

The next section outlines the steps you should take to identify and characterize potential spills, to eliminate or reduce spill potential, and how to respond when spills occur.

Identify Potential Spill Areas

As part of the Assessment Phase of developing the Storm Water Pollution Prevention Plan, you should have created a list or inventory of materials handled, used, and disposed of. A site map indicating the drainage area of each storm water outfall was also created. Now overlay the drainage area map with the locations of areas and activities with high material spill potential to determine where spills will most likely occur. Spill potential also depends on how materials are handled, the types and volumes of materials handled, and how materials are stored on your site. You must describe these factors in your plan.

The activities and areas where spills are likely to occur on your site are listed and described below:

- Loading and unloading areas
- Storage areas
- Process activities

- Dust or particulate generating processes
- Waste disposal activities.

Loading and unloading areas have a high spill potential because the nature of the activity involves transfer of materials from one container to another. The spill potential is affected by the integrity of the container, the form of the chemical being transferred, the design of the transfer area (bermed vs. direct connection to the storm water collection system), the proximity of this area to the storage area, and procedures for loading and unloading. Evaluate the spill potential from all loading and unloading equipment, such as barges, railroad cars, tank trucks, and front end loaders, as well as storage and vehicle wash areas.

Storage areas, both indoor and outdoor, are potential spill areas. Outdoor storage areas are exposed to storm water runoff and may provide direct contact between potential pollutants and storm water. Indoor storage areas may contaminate storm water if the drains in the storage area are connected to the storm sewer or if improper clean up procedures in the event of a spill are used. This evaluation should consider the type, age, and condition of storage containers and structures (including tanks, drums, bags, bottles). An evaluation of the spill potential of storage areas should also focus on how employees handle materials.

All process areas are potential sources of storm water contamination if the floor drains in these areas are connected to storm sewers (see Section 2.2.4). If these drains cannot be sealed, the process area should be evaluated for the adequacy of spill control structures such as secondary containment, if necessary. One should also consider normal housekeeping procedures. Some process areas are hosed down periodically and the resulting wash water contains pollutants. Outdoor process activities may contaminate storm water if spills are diverted to the storm sewer.

Also, evaluate spill potential from the following stationary facilities:

- Manufacturing areas
- Warehouses
- Chemical processing and or blending areas
- Temporary and permanent storage sites
- Power generating facilities
- Food processing areas
- Tank farms
- Service stations
- Parking lots
- Access roads.

Also evaluate the possibility of storm water contamination from underground sources, such as tanks and pipes. Leaking underground storage tanks are often a source of storm water contamination.

In addition to identifying these and other potential spill areas, projecting possible spill volume and type of material is critical to developing the correct response procedures for a particular area.

Specify Material Handling Procedures and Storage Requirements

Through the process of developing various spill scenarios, ideas for eliminating or minimizing the spill or its impact will emerge. These solutions should be prioritized and adopted according to conditions of effectiveness, cost, feasibility, and ease of implementation. Following is a list of some suggested activities or alterations that may be made to reduce the potential that spills will occur or impact storm water quality:

- Develop ways to recycle, reclaim and/or reuse process materials to reduce the volume brought into the facility
- Install leak detection devices, overflow controls, and diversion berms
- Disconnect drains from processing areas that lead to the storm sewer (however, be sure that any such action would not create a health hazard within your facility)
- Adopt effective housekeeping practices
- Adopt a materials flow/plant layout plan (i.e., do not store bags that are easily punctured near high-traffic areas where they may be hit by moving equipment or personnel)
- Perform regular visual inspections to identify signs of wear on tanks, drums, containers, storage shelves, and berms and to identify sloppy housekeeping or other clues that could lead to potential spills
- Perform preventive maintenance on storage tanks, valves, pumps, pipes, and other equipment
- Use filling procedures for tanks and other equipment that minimize spills
- Use material transfer procedures that reduce the chance of leaks or spills
- Substitute less or non-toxic materials for toxic materials
- Ensure appropriate security.

Identify Spill Response Procedures and Equipment

In the event that spill prevention measures fail, a swiftly executed response may prevent contamination of storm water. Spill response plans are required by numerous programs for various reasons. However, this may be the first time that a spill response plan specifically addresses protection of storm water quality.

Past experience has shown that the single most important obstacle to an effective spill response plan is its implementation. Develop the plan with its ease of implementation in mind. The spill response procedures should be clear, concise, step-by-step instructions for responding to the spill events at a particular facility. Organize the plan to facilitate rapid identification of the appropriate set of procedures. For example, you may find that the plan works best for your facility when organized by spill location. Another possible method of organization is by spilled material. The key component to implementation is the ability of employees to use the plan quickly and effectively. The specific approach you take will depend on the specific conditions at your facility such as size, number of employees and the spill potential of the site.

The spill response plan is developed based on the spill potential scenarios identified. It reflects a consideration of the potential magnitude and frequency of spills, of the types of materials spilled,

and of the variety of potential spill locations. Specific procedures may be needed to correspond to particular chemicals onsite. At all times during the operation of a facility, personnel with appropriate training and authority should be available to respond to spills.

The spill response plan should describe:

- Identification of spill response "team" responsible for implementing the spill response plan.
- Safety measures.
- Procedures to notify appropriate authorities providing assistance [police, fire, hospital, Publicly Owned Treatment Works (POTW), etc.].
- Spill containment, diversion, isolation, cleanup.
- Spill response equipment including:
 - Safety equipment such as respirators, eye guards, protective clothing, fire extinguisher, and two-way radios.
 - Cleanup equipment such as booms, barriers, sweeps, adsorbents, containers, etc.

Following any spills, evaluate how the prevention plan was successful or unsuccessful in responding and how it can be improved.

EPCRA, Section 313, Facility Spill Prevention and Response Requirements

EPA's General Permit sets forth more specific requirements for facilities subject to reporting under EPCRA, Section 313 for water priority chemicals [Part IV.D.7.b.(7).]. When a leak or spill of a Section 313 water priority chemical has occurred, the contaminated soil, material, or debris must be removed promptly and disposed of in accordance with Federal, State, and local requirements and as described in the Storm Water Pollution Prevention Plan.

These facilities are also required to designate a person responsible for spill prevention, response, and reporting procedures (see Section 2.1.1, Pollution Prevention Team).

Sediment and Erosion Control

EPA GENERAL PERMIT REQUIREMENTS

Sediment and Erosion Control

Part IV.D.3.h.

Identify areas which, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion.

There may be certain areas on your site which, due to construction activities, steep slopes, sandy soils, or other reasons, are prone to soil erosion. Construction activities typically remove grass and other protective ground covers resulting in the exposure of underlying soil to wind and rain. Similarly, steep slopes or sandy soils may not be able to hold plant life so that soils are exposed. Because the soil surface is unprotected, dirt and sand particles are easily picked up by wind and/or washed away by rain. This process is called erosion. Erosion can be controlled or prevented with the use of certain BMPs. A number of these measures are described in Chapter 4.

Management of Runoff

EPA GENERAL PERMIT REQUIREMENTS

Management of Runoff

Part IV.D.3.i.

The plan shall contain a narrative consideration of the appropriateness of traditional storm water management practices (practices other than those which control the source of pollutants) used to divert, infiltrate, reuse, or otherwise manage storm water runoff in a manner that reduces pollutants in storm water discharges from the site. The plan shall provide that measures determined to be reasonable and appropriate shall be implemented and maintained. The potential of various sources at the facility to contribute pollutants to storm water discharges associated with industrial activity [see Part IV.D.2. (description of potential pollutant sources) of this permit] shall be considered when determining reasonable and appropriate measures. Appropriate measures may include: vegetative swales and practices, reuse of collected storm water (such as for a process or as an irrigation source), inlet controls (such as oil/water separators), snow management activities, infiltration devices, and wet detention/retention devices.

Many BMPs discussed in this chapter are measures to reduce pollutants at the source before they have an opportunity to contaminate storm water runoff. Traditional storm water management practices also can be used to direct storm water away from areas of exposed materials or potential pollutants. Further, traditional storm water management practices can be used to direct storm water that contains pollutants to natural or other types of treatment locations. For example, using an oil/water separator on storm water that has oil and grease in it will take out some of the oil and grease before the storm water leaves the site. Permits will generally not require specific storm water management practices since these practices must be selected on a case-by-case basis depending on the activities at your site and the amount of space you have available.

Chapter 4 provides descriptions of several traditional storm water management practices. Additional sources of information are listed in Appendix A.

2.3.2 Advanced Best Management Practices

In addition to those BMPs that should be routinely incorporated into your storm water prevention pollution plan, you may need to implement some "advanced" BMPs that are specifically directed to address particular pollutant sources or activities on your site. As discussed in Chapters 3 and 4, these BMPs must be tailored to address specific problems.

In determining which BMPs represent the Best Available Technology Economically Achievable (BAT), the following factors are considered: (1) the age of equipment and facilities involved; (2) the process employed; (3) the engineering aspects of the application of various types of control techniques; (4) process changes; (5) the cost of achieving effluent reduction; and (6) non-water quality environmental impact (including energy requirements).

BMP Cost and Effectiveness

The costs of implementing the BMPs described in this manual vary depending upon many factors and site-specific conditions. In general, the required baseline BMPs are relatively low in cost when compared with more traditional storm water treatment or highly engineered controls. Costs also vary depending upon the size of the facility, the number of employees, the types of chemicals or raw materials stored or used, and the nature of plant operations. However, because many of the baseline practices are widely accepted and considered "common sense" or standard good operating practices, many facilities have them in place.

Because BMP effectiveness is also site-specific, this manual does not attempt to provide specific guidance on this matter.

Reduce, Reuse, Recycle

As described in Chapter 1, EPA encourages industrial facilities to choose practices that prevent the contamination of storm water rather than treat it once it is polluted. Use of the Storm Water Management Hierarchy (see Table 2.1) as a tool to help select BMPs for your program will help you discover how to prevent pollution and avoid its associated costs and liabilities while meeting the environmental goals of EPA's Storm Water Program.

When selecting a BMP for your storm water management program, EPA recommends that you choose practices that eliminate or reduce the amount of pollutants generated on your site. This practice is referred to as "source reduction." When it is impossible, select options that recycle or reuse the storm water in your industrial processes, or those that reduce the need to store and expose more hazardous materials to storm water by recycling or recovering used materials. Treating storm water to remove pollutants before they leave the site is the next best option, although this often just transfers the problem from one place or medium to another. Table 2.1, below, provides examples of BMPs that are representative of the different types of storm water management.

TABLE 2.1 CLASSIFICATION OF STORM WATER BMPs

Storm Water Management Hierarchy	Example BMPs
Source Reduction	<ul style="list-style-type: none"> • Preventive maintenance • Spill prevention • Chemical substitution • Housekeeping • Training • Materials management practices
Containment/Diversion	<ul style="list-style-type: none"> • Segregating the activity of concern • Covering the activity • Berming the activity • Diverting flow to grassed area • Dust control
Recycling	<ul style="list-style-type: none"> • Recycling
Treatment	<ul style="list-style-type: none"> • Oil/water separator • Vegetated swale • Storm water detention pond

2.3.3 Completing the BMP Identification Phase

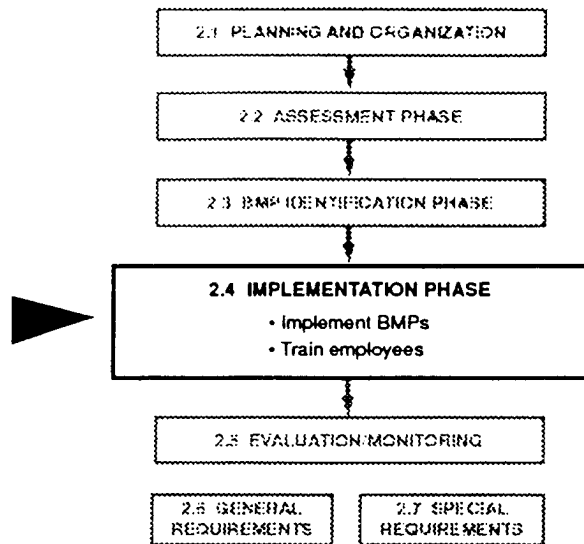
When you started designing your pollution prevention plan, you assembled certain crucial pieces of information:

- A list of actual and potential storm water discharge problems
- The location of each outfall on a site map showing the drainage route from your property
- A list of the management plans and practices that are already in place at your facility
- Information contained in this manual on "baseline" BMPs and "advanced" BMPs for resolving storm water problems.

At the completion of the BMP identification phase, you should have accomplished the following:

- Reviewed your current management plans and practices to assess their effectiveness in addressing storm water discharges on your site.
- Scheduled the implementation of "baseline" BMPs and whatever "advanced" BMPs were necessary to effectively eliminate storm water pollution problems at your site.
- Determined what to do about any identified, unpermitted connections of non-storm water discharges to separate storm sewers. Your options were to:
 - Discontinue any connections of non-storm water discharges to a separate storm sewer system
 - Obtain an NPDES permit for the non-storm water discharge.

- Identified options for addressing any unresolved storm water discharge problems.
- Gained management approval and acceptance of the plan.



2.4 IMPLEMENTATION PHASE

At this point, you have designed your Storm Water Pollution Prevention Plan and the plan has been approved by facility management. This next section of the manual will guide you through the next major phase in the planning process—implementation. Specifically, you will:

- Implement the selected storm water BMPs
- Train all employees to carry out the goals of the plan.

2.4.1 Implement Appropriate Controls

EPA GENERAL PERMIT REQUIREMENTS	
Implementation	
Part IV.D.	
Facilities must implement the provisions of the storm water pollution prevention plan as a condition of EPA's general permit. The plan shall include a schedule for implementing identified storm water management controls.	

Implementing your plan will involve several steps:

- Develop a schedule for implementation. For example, your schedule might include a deadline for putting improved housekeeping measures into practice. Should implementation involve certain types of modifications to your site (e.g., any construction), you will need to account for the time required to secure any necessary local or State permits.
- Assign specific individuals with responsibility for implementing aspects of the plan and/or monitoring implementation.
- Ensure that management approves of your implementation schedule and strategy and schedule regular times for reporting progress to management.

Worksheet #8 (located at the end of Chapter 2) will help you list the schedule for implementation of your facility's plan.

2.4.2 Employee Training

EPA GENERAL PERMIT REQUIREMENTS
<p>Employee Training</p> <p>Part IV.D.3.e.</p> <p>Employee training programs must inform personnel at all levels of responsibility of the components and goals of the Storm Water Pollution Prevention Plan. Training should address each component of your pollution prevention plan, including how and why tasks are to be implemented. Topics will include:</p> <ul style="list-style-type: none">• Spill prevention and response• Good housekeeping• Material management practices. <p>The pollution prevention plan must specify how often training is conducted.</p>

Employee training is essential to effective implementation of the Storm Water Pollution Prevention Plan. The purpose of a training program is to teach personnel at all levels of responsibility the components and goals of the Storm Water Pollution Prevention Plan. When properly trained, personnel are more capable of preventing spills, responding safely and effectively to an accident when one occurs, and recognizing situations that could lead to storm water contamination.

The following sections include ideas about how to create an effective storm water pollution prevention training program for your facility.

Worksheet #9 (located at the end of Chapter 2) is designed to help you organize your employee training program.

Spill Prevention and Response

Spill prevention and response procedures are described in detail in Section 2.3.1. Discuss these procedures or plans in the training program in order to ensure all plant employees, not just those on the spill response teams, are aware of what to do if a spill occurs. Specifically, all employees involved in the industrial activities of your facility should be trained about the following measures:

- Identifying potential spill areas and drainage routes, including information on past spills and causes
- Reporting spills to appropriate individuals, without penalty (e.g., employees should be provided "amnesty" when they report such instances)
- Specifying material handling procedures and storage requirements
- Implementing spill response procedures.

Onsite contractors and temporary personnel should also be informed of the plant operations and design features in order to help prevent accidental discharges or spills from occurring.

Good Housekeeping

Also, teach facility personnel how to maintain a clean and orderly work environment. Section 2.3.1 above outlines the steps for practicing good housekeeping. Emphasize these points in the good housekeeping portion of your training program:

- Require regular vacuuming and/or sweeping
- Promptly clean up spilled materials to prevent polluted runoff
- Identify places where brooms, vacuums, sorbents, foams, neutralizing agents, and other good housekeeping and spill response equipment are located
- Display signs reminding employees of the importance and procedures of good housekeeping
- Discuss updated procedures and report on the progress of practicing good housekeeping at every meeting
- Provide instruction on securing drums and containers and frequently checking for leaks and spills
- Outline a regular schedule for housekeeping activities to allow you to determine that the job is being done.

Materials Management Practices

- Neatly organize materials for storage
- Identify all toxic and hazardous substances stored, handled, and produced onsite
- Discuss handling procedures for these materials.

Tools For a Successful Training Program

Here are some suggestions of training tools that you can include in your facility's training program:

- Employee handbooks
- Films and slide presentations
- Drills
- Routine employee meetings
- Bulletin boards
- Suggestion boxes
- Newsletters
- Environmental excellence awards or other employee incentive programs.

Providing employees with incentives, such as awards for practicing pollution prevention, is a good way to motivate personnel in working to achieve the goals of the Storm Water Pollution Prevention Plan.

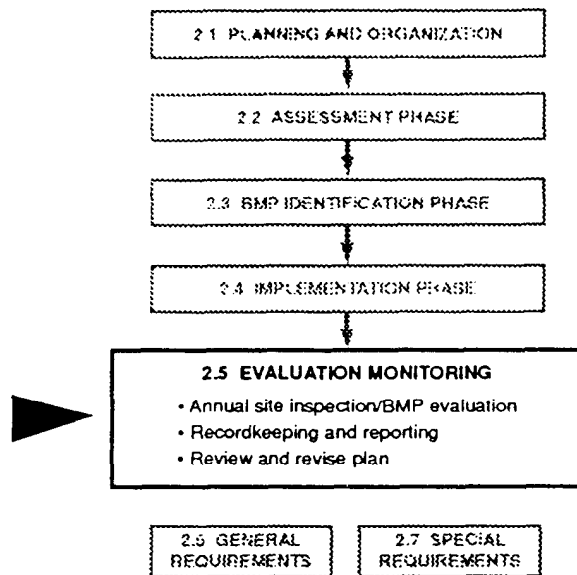
How Often to Conduct Training

You should examine your plan to determine how often you should train the employees at your facility. Frequency should take into account the complexity of your management practices and the nature of your staff, including staff turnover and changes in job assignments. Facilities are required to specify a schedule for periodic training activities in their plan. In any case, you should regularly evaluate the effectiveness of your training efforts. In many cases, this will simply involve speaking with your employees to verify that information has been communicated effectively.

EPCRA, Section 313 Facility Requirements

EPA's General Permit contains additional training requirements for employees and contractor personnel that work in areas where EPCRA, Section 313 water priority chemicals are used or stored [Part IV.D.7.b.(9)]. These individuals must be trained in the following areas at least once per year:

- Preventive measures, including spill prevention and response and preventive maintenance
- Pollution control laws and regulations
- The facility's Storm Water Pollution Prevention Plan
- Features and operations of the facility which are designed to minimize discharges of Section 313 water priority chemicals, particularly spill prevention procedures.



2.5 EVALUATION PHASE

Now that your Storm Water Pollution Prevention Plan has been put to action, you must keep it up-to-date by regularly evaluating the information you collected in the Assessment Phase and the controls you selected in the BMP Identification Phase. Specifically, you will:

- Conduct site evaluations
- Keep records of all inspections and reports
- Revise the plan as needed.

2.5.1 Annual Site Compliance Evaluation

EPA GENERAL PERMIT REQUIREMENTS	
Comprehensive Site Compliance Evaluation Part IV.D.4.	
<p>Qualified personnel must conduct site compliance evaluations at appropriate intervals specified in the plan at least once a year (at least once in three years for inactive mining sites). As part of your compliance evaluations, you are required to:</p>	
<ul style="list-style-type: none"> • Inspect storm water drainage areas for evidence of pollutants entering the drainage system • Evaluate the effectiveness of measures to reduce pollutant loadings and whether additional measures are needed • Observe structural measures, sediment controls, and other storm water BMPs to ensure proper operation • Inspect any equipment needed to implement the plan, such as spill response equipment • Revise the plan as needed within two weeks of inspection (potential pollutant source description and description of measures and controls) • Implement any necessary changes in a timely manner, but at least within 12 weeks of the inspection • Prepare a report summarizing inspection results and follow up actions, the date of inspection and personnel who conducted the inspection; identify any incidents of noncompliance <u>or</u> certify that the facility is in compliance with the plan. • All incidents of noncompliance must be documented in the inspection report. Where there are no incidents of noncompliance, the inspection report must contain a certification that the facility is in compliance with the plan. • Sign the report in accordance with Section 2.6.2 and keep it with the plan. 	

Annual site compliance evaluations are comprehensive inspections performed by individuals specifically designated in the Storm Water Pollution Prevention Plan as having responsibility for conducting such inspections. These employees should be familiar with all facility industrial operations and Storm Water Pollution Prevention Plan goals and requirements. Furthermore, inspectors should be able to make necessary management decisions or have direct access to management.

This annual evaluation provides a basis for evaluating the overall effectiveness of your Storm Water Pollution Prevention Plan. In particular, the annual site compliance evaluation will allow you to verify that the description of potential pollutant sources contained in the plan is accurate, that the plan drainage map is accurate or has been updated to reflect current conditions, and that controls identified in the plan to reduce pollutants in storm water discharges are accurately identified, in place and working. The annual site compliance evaluation will also identify where new controls are needed so that you may implement them and incorporate them into the plan.

The scope of the annual site compliance evaluation will depend on various factors, including the scope of the Storm Water Pollution Prevention Plan and the size and nature of the activities occurring at the facility. The process for conducting the evaluation should follow these steps:

- Review the Storm Water Pollution Prevention Plan and draw up a list of those items which are part of material handling, storage, and transfer areas covered by the plan
- List all equipment and containment in these areas covered in the plan
- Review facility operations for the past year to determine if any more areas should be included in the original plan, or if any existing areas were modified so as to require plan modification; change plan as appropriate
- Conduct inspection to determine (1) if all storm water pollution prevention measures are accurately identified in the plan, and (2) are in place and working properly
- Document findings
- Modify Storm Water Pollution Prevention Plan as appropriate.

As each facility and Storm Water Pollution Prevention Plan is unique, so the exact inspection format will vary from facility to facility. All documentation regarding conditions necessitating modification to the Storm Water Pollution Prevention Plan should be kept on file as part of the plan until one year after coverage under the permit expires.

2.5.2 Recordkeeping and Internal Reporting

EPA GENERAL PERMIT REQUIREMENTS	
Keeping Records	
Part IV.D.3.f.	
Incidents such as spills or other discharges, along with other information describing the quality and quantity of storm water discharges must be included in the records. Inspections and maintenance activities shall be documented and recorded in the plan. Records must be maintained for one year after the permit expires.	

Keeping records of and reporting events that occur onsite is an effective way of tracking the progress of pollution prevention efforts and waste minimization. Analyzing records of past spills, for example, can provide useful information for developing improved BMPs to prevent future spills of the same kind. Recordkeeping and internal reporting represent good operating practices because they can increase the efficiency of the facility and effectiveness of BMPs.

Recordkeeping and Reporting Procedures for Spills, Leaks, and Other Discharges

A recordkeeping system set up for documenting spills, leaks, and other discharges, including discharges of hazardous substances in reportable quantities (for a discussion of reportable quantities, see Section 2.2.3 and Appendix H), could help your facility minimize incident recurrence, correctly respond with appropriate cleanup activities, and comply with legal requirements. The system for recordkeeping and reporting could also include any other information that would enhance the effectiveness of the Storm Water Pollution Prevention Plan. You should make a point of keeping track of reported incidents and following up on results of inspections and reported spills, leaks, or other discharges.

Records should include the following, as appropriate:

- The date and time of the incident, weather conditions, duration, cause, environmental problems, response procedures, parties notified, recommended revisions of the BMP program, operating procedures, and/or equipment needed to prevent recurrence.
- Formal written reports. These are helpful in reviewing and evaluating the discharges and making revisions to improve the BMP program. Document all reports you call in to the National Response Center in the event of a reportable quantity discharge. For more information on reporting spills or other discharges, refer to Section 2.2.3 and 40 CFR 117.3 and 40 CFR 302.4.
- A list of the procedures for notifying the appropriate plant personnel and the names and telephone numbers of responsible employees. This enables more rapid reporting of and response to spills and other incidents.

Recordkeeping and Reporting Procedures for Inspections and Maintenance Activities

Maintaining records for all inspections is an important element of any Storm Water Pollution Prevention Plan. Documenting all inspections, whether routine or detailed, is a good preventive maintenance technique, because analysis of inspection records allows for early detection of any potential problems. Recordkeeping also helps to devise improvements in the BMP program after inspection records have been analyzed. Recordkeeping and reporting for maintenance activities should also be a part of the plan as another preventive maintenance measure. Keeping a log of all maintenance activities, such as the cleaning of oil and grit separators or catch basins, will enable the facility to evaluate the effectiveness of the BMP program, equipment, and operation.

There are various simple techniques used to accurately document and report inspection results including the following:

- Field notebooks
- Timed and dated photographs

- Video tapes
- Drawings and maps.

Keeping Records Updated

It is important to keep all records updated on:

- The correct name and address of facility
- The correct name and location of receiving waters
- The number and location of discharge points
- Principal products and production rates (where appropriate).

Records Retention

Records of spills, leaks, or other discharges, inspections, and maintenance activities must be retained for at least one year after coverage under the permit expires.

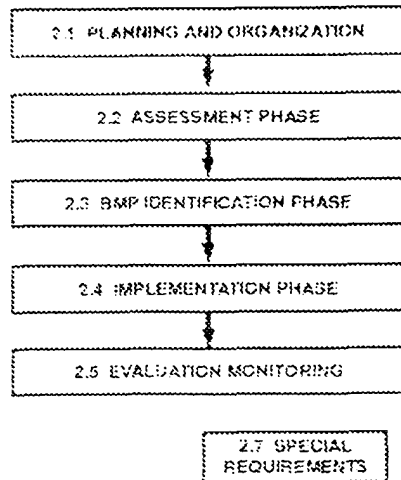
2.5.3 Plan Revisions

EPA GENERAL PERMIT REQUIREMENTS	
Keeping Plans Current	
Part IV.C.	
You must amend your plan whenever there is a change in design, construction, operation, or maintenance, which may impact the potential for pollutants to be discharged or if the Storm Water Pollution Prevention Plan proves to be ineffective in controlling the discharge of pollutants. Facilities are not required to submit a notice to the Director each time the pollution prevention plan is modified unless the Director specifically requests changes to be made to the plan.	

For your Storm Water Pollution Prevention Plan to be effective, you should ensure that your plan complies with any permit conditions that apply to your facility and that you have accurately represented facility features and operations. Should either of these conditions not be met by the plan, you must make the necessary changes. Either the managers of facilities or the permitting authority may recommend changes to the plan (see Section 2.6.4 for requirements).

Storm Water Pollution Prevention Plans are developed based on site-specific features. When there are changes in design, construction, operation, or maintenance, and that change will have a significant effect on the potential for discharging pollutants in storm water at a facility, your Storm Water Pollution Prevention Plan should be modified to reflect the changes and new conditions. For example, if your facility begins to use a new chemical in its production operations, proper handling procedures for this chemical should be incorporated into the facility plan.

You may also decide to change the plan because it has proven to be ineffective in controlling storm water contamination based on the results of routine visual inspections (see Section 2.3.1) or more comprehensive site evaluations (see Section 2.5.1).

**2.6 GENERAL REQUIREMENTS**

- Deadlines
- Signature requirements
- Plan location and public access
- Required plan modification

2.6 GENERAL REQUIREMENTS

This Section provides guidance on some of the administrative requirements related to organizing and developing your Storm Water Pollution Prevention Plan. This information should be reviewed prior to beginning to develop your facility's Storm Water Pollution Prevention Plan. These requirements include:

- Deadlines for plan development and implementation
- Who must sign the plan
- Where to keep the plan
- How to make changes to the plan that are required by the Director.

2.6.1 Schedule for Plan Development and Implementation

EPA GENERAL PERMIT REQUIREMENTS		
Schedule for Plan Development and Implementation		
Part IV.A.		
Type of Facility	Deadline for Plan Completion	Deadline for Plan Compliance
Facilities with industrial activities existing on or before October 1, 1992	April 1, 1993	October 1, 1993
Facilities commencing industrial activities after October 1, 1992, but on or before December 31, 1992	60 days after commencement of discharge	60 days after commencement of discharge
Facilities commencing industrial activities on or after January 1, 1993	48 hours prior to commencement of discharge (upon submittal of NOI)	48 hours prior to commencement of discharge (upon submittal of NOI)
Oil and gas exploration, production, processing or treatment operations discharging a reportable quantity release in storm water after October 1, 1992	60 days after release	60 days after release
Industrial facilities that are owned or operated by a municipality that are rejected or denied from the group application process	365 days after date of rejection or denial	545 days after date of rejection or denial
Note: The Director may grant a written extension for plan preparation and compliance for new dischargers (after October 1, 1992) upon showing of good cause.		

The deadlines to complete and comply with or implement your facility's Storm Water Pollution Prevention Plan may depend on the type of permit under which your facility is covered. Be sure to read your permit carefully so that you know what the deadlines are. Many NPDES-delegated States may issue general permits for storm water that contain deadlines similar to the deadlines in EPA's General Permits.

2.6.2 Required Signatures

EPA GENERAL PERMIT REQUIREMENTS
<p style="text-align: center;">Signature Requirements Part VII.G.1.</p> <p>Where your facility is subject to storm water permit requirements, all reports, certifications, or information either submitted to the permitting authority or to the operator of a large or medium municipal separate storm sewer system, or required to be maintained by the permittee onsite should be signed as follows:</p> <ul style="list-style-type: none"> • For a corporation, the plan must be signed by a "responsible corporate officer." A responsible corporate officer may be <u>any one of the following</u>: <ul style="list-style-type: none"> - A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation - The manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25,000,000 (in second quarter 1980 dollars) if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedure. • For a partnership or sole proprietorship, the plan must be signed by a general partner or the proprietor, respectively. • For a municipality, State, Federal, or other public agency, the plan must be signed by either: <ul style="list-style-type: none"> - The principal executive officer or ranking official, which includes the chief executive officer of the agency, or - The senior officer having responsibility for the overall operations of a principal geographic unit of the agency.
<p style="text-align: center;">Designating Signatory Authority Part VII.G.2.</p> <p>Any of the above persons may designate a duly authorized representative to sign for them. The representative should either have overall responsibility for the operation of the facility or environmental matters for the company. If an authorized representative is appointed, the authorization must be put in writing by the responsible signatory and submitted to the Director. Any change in an authorized individual or an authorized position must be made in writing and submitted to the permitting authority.</p>

EPA GENERAL PERMIT REQUIREMENTS**Certification****Part VII.G.2.d.**

Any person signing documents under this permit shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

To ensure that your facility's Storm Water Pollution Prevention Plan is completely developed and adequately implemented, your NPDES permit will generally require that an authorized facility representative sign and certify the plan. The authorized facility representative should be someone at or near the top of your facility's management chain, such as the president, vice president, or a production manager who has been delegated the authority to sign and certify this type of document. In signing the plan, the corporate officer is attesting that the information is true. This signature provides a basis for an enforcement action to be taken against the person signing the plan and related reports. The permittee should be aware that Section 309 of the Clean Water Act provides for significant penalties where information is false or the permittee violates, either knowingly or negligently, its permit requirements. In some cases, your general permit may require certification of the plan by a professional engineer. Specific signatory requirements will be listed in your NPDES permit.

EPCRA, Section 313 Facility Plan Certification Requirements

EPA's General Permit contains additional certification requirements for facilities subject to reporting under EPCRA, Section 313 for water priority chemicals [Part IV.D.7.b.(10).]. The plan must be reviewed and certified by a Registered Professional Engineer and recertified every three years or as soon as practicable after significant modifications are made to the facility. This certification that the plan was prepared in accordance with good engineering practices does not relieve the facility owner or operator of responsibility to prepare and implement the plan, however.

2.6.3 Plan Location and Public Access**EPA GENERAL PERMIT REQUIREMENTS****Where and How Long to Keep the Plan****Parts IV.B. and VI.E.**

Plans are required to be maintained onsite of the facility unless the Director, or authorized representative, or the operator of a large or medium municipal separate storm sewer system, requests that the plan be submitted. Plans and all required records must be kept until at least one year after coverage under the permit expires.

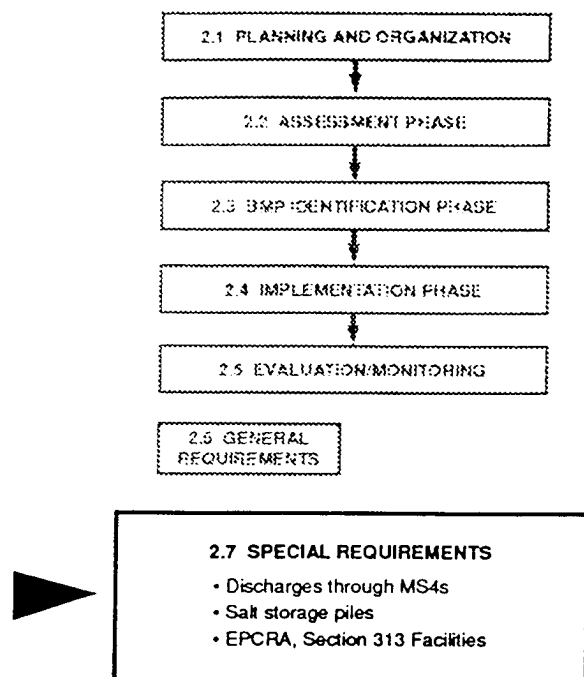
Although all plans are to be maintained onsite, some NPDES storm water permits may require that facilities submit copies of their Storm Water Pollution Prevention Plans to the Director for review. Examine your permit carefully to determine what submittal requirements apply to your facility. Even if your permit does not require you automatically to submit your plan to your permitting authority, you must provide copies of the plan to your permitting authority or to your municipal operator upon request. Plans and associated records are available to the public by request through the permitting authority.

2.6.4 Director-Required Plan Modifications

EPA GENERAL PERMIT REQUIREMENTS	
Required Changes	
Part IV.B.3.	
Any changes required by the permitting authority shall be made within 30 days, unless otherwise provided by the notification, and the facility must submit a certification signed in accordance with Section 2.6.2 to the Director that the requested changes have been made.	

Upon reviewing your plan, the permitting authority may find that it does not meet one or more of the minimum standards established by the pollution prevention plan requirements. In this case, the permitting authority will notify you of changes needed to improve the plan.

For example, where a facility has not addressed spill response procedures for a toxic chemical to the extent that the permitting authority believes is necessary, the facility will be required to revise the procedures. The permitting authority retains the authority to make this type of request at any time during the effective period of the plan. In the notification, the permitting authority will establish a deadline for the incorporation of the required changes, unless the permit specifies a deadline. Permittees may or may not have to certify that the requested changes have been implemented depending on their specific permit conditions. You should examine your permit for such details.



2.7 SPECIAL REQUIREMENTS

In addition to the minimum "baseline" BMPs discussed in previous sections, facilities may be subject to additional "special" requirements. Not all facilities will have to include these special requirements in their Storm Water Pollution Prevention Plan. Be sure to check your permit closely for these conditions. In particular, EPA's General Permit includes special requirements for:

- Facilities that discharge storm water through municipal separate storm sewer systems
- Facilities subject to EPCRA, Section 313 reporting requirements
- Facilities with salt storage piles.

2.7.1 Special Requirements for Discharges Through Municipal Separate Storm Sewer Systems

EPA GENERAL PERMIT REQUIREMENTS
<p style="text-align: center;">Discharges Through Large or Medium Municipal Separate Storm Sewer Systems (MS4s)</p> <p style="text-align: center;">Part IV.D.5.</p> <p>Permittees must comply with conditions in municipal storm water management programs developed under the NPDES permit issued for that system to which the industrial facility discharges, provided that the facility was directly notified of the applicable requirements by the municipal operator. The facility must be in compliance with these conditions by the deadlines specified in the pollution prevention plan listed in Section 2.6.1.</p>

The November 16, 1990, storm water discharge permit application regulations require large and medium municipal separate storm sewer systems (systems serving a population of 100,000 or more) to develop storm water management programs in order to control pollutants discharged through the municipal systems. These management programs will address discharges of industrial storm water through the systems to the extent that they are harmful to the water quality of receiving streams. Municipalities should be aware of the facilities with storm water discharges associated with industrial activity that discharge into their separate storm sewer system because the November 16, 1990, final rule required these facilities to notify the municipal operator. In addition, facilities covered by general permits will typically be required to submit a copy of their NOI to the municipal operator. EPA emphasizes that it is the facility's responsibility to inform the municipality of all storm water discharges associated with industrial activity to the separate storm sewer system. Facilities with such discharges that have not yet contacted the appropriate municipal authority should do so immediately.

Although facility-specific Storm Water Pollution Prevention Plans for industries are designed to prevent pollutants from entering storm water discharges, the municipal operator may find it necessary to impose specific requirements on a particular industrial facility or class of industrial

facilities in some situations. One way to ensure that facilities comply with these requirements is to include a provision in the facility's NPDES storm water discharge permit that directly requires compliance. This mechanism provides a basis for enforcement action to be directed, where necessary, against the owner or operator of the facility with a storm water discharge associated with industrial activity.

2.7.2 Special Requirements for EPCRA, Section 313 Reporting Facilities

Section 313 of EPCRA requires operators of manufacturing facilities that handle toxic chemicals in amounts exceeding threshold levels (listed at 40 CFR 372.25) to report to the government on an annual basis. Because these types of facilities handle large amounts of toxic chemicals, EPA concluded that they have an increased potential to degrade the water quality of receiving streams. To address this risk, EPA established specific control requirements in its general permit. In particular, these requirements apply to Section 313 facilities that report for "water priority chemicals" that include any of over 200 chemicals that have been identified by EPA as especially toxic to water ecosystems. For reference, Appendix I contains a list of Section 313 water priority chemicals.

Many of the requirements outlined below are specifically designed to address the water quality concerns that toxic chemicals present. Incorporation of these requirements into site-specific Storm Water Pollution Prevention Plans will prevent spills and leaks of water priority chemicals and eliminate or reduce other opportunities for exposure of toxic chemicals to storm water, thus protecting receiving streams from toxic discharges.

Specific Requirements

The following specific control requirements must be practiced in areas where Section 313 water priority chemicals are stored, handled, processed, or transferred:

- Provide containment, drainage control, and/or diversionary structures:
 - Prevent or minimize runoff by installing curbing, culverting, gutters, sewers, or other controls, and/or
 - Prevent or minimize exposure by covering storage piles.
- Prevent discharges from all areas:
 - Use manually activated valves with drainage controls in all areas, and/or
 - Equip the plant with a drainage system to return spilled material to the facility.
- Prevent discharges from liquid storage areas:
 - Store liquid materials in compatible storage containers
 - Provide secondary containment designed to hold the volume of the largest storage tank plus precipitation.

- Prevent discharges from loading/unloading areas:
 - Use drip pans and/or
 - Implement a strong spill contingency and integrity testing plan.
- Prevent discharges from handling/processing/transferring areas:
 - Use covers, guards, overhangs, door skirts
 - Conduct visual inspections or leak tests for overhead piping.
- Introduce facility security programs to prevent spills:
 - Use fencing, lighting, traffic control, and/or secure equipment and buildings.

Additional requirements are baseline BMPs that have been enhanced to address specific storm water concerns associated with the handling of toxic chemicals. These additional requirements are highlighted in previous sections on the pages indicated below:

Pollution Prevention Team	p. 2-5
Preventive Maintenance	p. 2-27
Spill Prevention Response	p. 2-34
Employee Training	p. 2-42
Professional Engineer Certification	p. 2-49

2.7.3 Special Requirements for Salt Storage Piles

EPA GENERAL PERMIT REQUIREMENTS	
Salt Storage Piles	
Part IV.D.8.	
Where storm water from a salt storage pile is discharged to waters of the United States, the pile must be covered or enclosed to prevent exposure to precipitation, except when salt is being added to or taken from the pile. Discharges shall comply with this provision as expeditiously as practicable, but in no event later than October 1, 1995.	

Facilities may use salt for de-icing purposes or part of their industrial processes. Since exposed salt piles will easily contaminate storm water runoff, an obvious BMP for these piles is to cover them with a tarp or other covering or enclose them in a shed or building. This requirement may not be applicable to all Storm Water Pollution Prevention Plans, however. Where runoff from the salt pile is not discharged to waters of the United States, then this requirement would not apply since the pollutants will not reach a waterbody. Since it may not be feasible to maintain cover over a salt pile when adding to it or taking salt from it, permits will generally incorporate some flexibility, as does EPA's General Permit.

STORM WATER POLLUTION PREVENTION PLAN WORKSHEETS

<u>Title</u>	<u>Worksheet #</u>
Pollution Prevention Team	1
Site Map	2
Material Inventory	3
Exposed Significant Materials	3a
List of Significant Spills and Leaks	4
Non-Storm Water Discharge Assessment	5
Non-Storm Water Discharge Failure to Certify Form	6
Pollutant Source Identification	7
BMP Identification	7a
Implementation Schedule	8
Employee Training Program/Schedule	9



POLLUTION PREVENTION TEAM
(Section 2.1.1)

MEMBER ROSTER

Worksheet #1

Completed by: _____

Title: _____

Date: _____

Leader: _____ **Title:** _____

Office Phone: _____

Responsibilities: _____

Members:

(1) _____ **Title:** _____

Office Phone: _____

Responsibilities: _____

(2) _____ **Title:** _____

Office Phone: _____

Responsibilities: _____

(3) _____ **Title:** _____

Office Phone: _____

Responsibilities: _____

(4) _____ **Title:** _____

Office Phone: _____

Responsibilities: _____

**DEVELOPING A SITE MAP
(Section 2.2.1)**

Worksheet #2

Completed by: _____

Title: _____

Date: _____

Instructions: Draw a map of your site including a footprint of all buildings, structures, paved areas, and parking lots. The information below describes additional elements required by EPA's General Permit (see example maps in Figures 2.3 and 2.4).

EPA's General Permit requires that you indicate the following features on your site map:

- All outfalls and storm water discharges
- Drainage areas of each storm water outfall
- Structural storm water pollution control measures, such as:
 - Flow diversion structures
 - Retention/detention ponds
 - Vegetative swales
 - Sediment traps
- Name of receiving waters (or if through a Municipal Separate Storm Sewer System)
- Locations of exposed significant materials (see Section 2.2.2)
- Locations of past spills and leaks (see Section 2.2.3)
- Locations of high-risk, waste-generating areas and activities common on industrial sites such as:
 - Fueling stations
 - Vehicle/equipment washing and maintenance areas
 - Area for unloading/loading materials
 - Above-ground tanks for liquid storage
 - Industrial waste management areas (landfills, waste piles, treatment plants, disposal areas)
 - Outside storage areas for raw materials, by-products, and finished products
 - Outside manufacturing areas
 - Other areas of concern (specify: _____)

Worksheet #3
Completed by: _____
Title: _____
Date: _____

Worksheet #3
Completed by: _____
Title: _____
Date: _____

[illegible]

Worksheet #3A

Title:

Date:

Description of Exposed Significant Material

Quantity Exposed (units)

**Location
(as indicated on the site
map)**

Method of Storage or Disposal
(e.g., pile, drum, tank)

Description of Material Management Practice (e.g., pile covered, drum sealed)

Worksheet #4
Completed by: _____
Title: _____
Date: _____

Directions: Record below all significant spills and significant leaks of toxic or hazardous pollutants that have occurred at the facility in the three years prior to the effective date of the permit.

Definitions: Significant spills include, but are not limited to, releases of oil or hazardous substances in excess of reportable quantities.

[illegible][illegible][illegible]

NON-STORM WATER DISCHARGE ASSESSMENT AND CERTIFICATION (Section 2.2.4)		Worksheet #5 Completed by: _____ Title: _____ Date: _____			
Date of Test or Evaluation	Outfall Directly Observed During the Test (identify as indicated on the site map)	Method Used to Test or Evaluate Discharge	Describe Results from Test for the Presence of Non-Storm Water Discharge	Identify Potential Significant Sources	Name of Person Who Conducted the Test or Evaluation

CERTIFICATION	
I, _____ (responsible corporate official), certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	
A. Name & Official Title (type or print)	B. Area Code and Telephone No.
C. Signature	D. Date Signed

NON-STORM WATER DISCHARGE ASSESSMENT AND FAILURE TO CERTIFY NOTIFICATION (Section 2.2.4)

Worksheet #6
Completed by: _____
Title: _____
Date: _____

Directions: If you cannot feasibly test or evaluate an outfall due to one of the following reasons, fill in the table below with the appropriate information and sign this form to certify the accuracy of the included information.

List all outfalls not tested or evaluated, describe any potential sources of non-storm water pollution from listed outfalls, and state the reason(s) why certification is not possible. Use the key from your site map to identify each outfall.

Important Notice: A copy of this notification must be signed and submitted to the Director within 180 days of the effective date of this permit.

Identify Outfall Not Tested/Evaluated	Description of Why Certification Is Infeasible	Description of Potential Sources of Non-Storm Water Pollution

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations, and that such notification has been made to the Director within 180 days of _____ (date permit was issued), the effective date of this permit.

A. Name & Official Title (type or print)

B. Area Code and Telephone No.

C. Signature

D. Date Signed

POLLUTANT SOURCE IDENTIFICATION (Section 2.2.6)

Worksheet #7
Completed by: _____
Title: _____
Date: _____

Instructions: List all identified storm water pollutant sources and describe existing management practices that address those sources. In the third column, list BMP options that can be incorporated into the plan to address remaining sources of pollutants.

Storm Water Pollutant Sources	Existing Management Practices	Description of New BMP Options
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

BMP IDENTIFICATION (Section 2.3.1)

Worksheet #7a
Completed by: _____
Title: _____
Date: _____

Instructions: Describe the Best Management Practices that you have selected to include in your plan. For each of the baseline BMPs, describe actions that will be incorporated into facility operations. Also describe any additional BMPs (activity-specific (Chapter 3) and site-specific BMPs (Chapter 4)) that you have selected. Attach additional sheets if necessary.

BMPs	Brief Description of Activities
Good Housekeeping	
Preventive Maintenance	
Inspections	
Spill Prevention Response	
Sediment and Erosion Control	
Management of Runoff	
Additional BMPs (Activity-specific and Site-specific)	

IMPLEMENTATION (Section 2.4.1)

Worksheet #8
Completed by: _____
Title: _____
Date: _____

Instructions: Develop a schedule for implementing each BMP. Provide a brief description of each BMP, the steps necessary to implement the BMP (i.e., any construction or design), the schedule for completing those steps (list dates) and the person(s) responsible for implementation.

BMPs	Description of Action(s) Required for Implementation	Scheduled Completion Date(s) for Req'd. Action	Person Responsible for Action	Notes
Good Housekeeping	1.			
	2.			
	3.			
Preventive Maintenance	1.			
	2.			
	3.			
Inspections	1.			
	2.			
	3.			
Spill Prevention and Response	1.			
	2.			
	3.			
Sediment and Erosion Control	1.			
	2.			
	3.			
Management of Runoff	1.			
	2.			
	3.			
Additional BMPs (Actively-specific and site-specific)	1.			
	2.			
	3.			

Worksheet #9
Completed by: _____
Title: _____
Date: _____

[illegible][illegible]

